EDITORIAL

DOMESTIC ENGINEERING

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AMERICA NEEDS HOMES.

THE Home is the backbone of any sound progressive country. The home owner is not a radical, nor, as a rule, is he a person who is totally indifferent as to who are in control of the various branches of the government or what they do. Dishonest, wasteful, and corrupt government is the result of lack of interest on the part of the voters. The man who has a home of his own is pretty certain to insist on the passage of laws that protect him in that home, and also to insist that these laws be enforced. The home is the stabilizing influence, but it seems to be losing ground, and as it does so many big problems arise that must be solved.

A short time ago Bishop Samuel Fallows, of Chicago, internationally known figure, stated that the housing shortage is responsible for a great many divorces, and that it is also responsible for delaying a great many marriages, and that it is the main factor in the prevention of others. For the average young man about to marry, the cost of building a home is too great, according to the Bishop, and the shortage of houses has resulted in the raising of rents to the point where if he marries he must be content to live in one room or possibly two, or the couple must continue to live with their parents. This results in severe congestion, especially in the larger cities, with the accompanying evil results.

What is the building industry going to do about it? The building industry is the second largest in the United States. It should correct this condition itself rather than wait for outside interests to do it. Its 1921 building outlays amounted to two and one-half billion dollars. It would seem that it would well repay the industry to take some real definite and constructive action to place the home within the reach of the average young man, and to encourage him in attempting to buy a home or having one built. There are quite a few today who would build homes if they thought it a safe investment. Is it? If not, why isn't it, and what can be done to make it a safe investment? A home should be the soundest investment on earth, and if that is not the case today, the conditions that prevent it from being so should be corrected and the public informed that they have been corrected.

If it is too difficult to obtain money for home building at reasonable rates, if the prices of certain classes of material are out of the general proportion, if wages are still too high, or if there are particularly wasteful practices, the various branches of the building industry should immediately set about seeing that these conditions are righted. It will repay the industry in the increased amount of business and at the same time it will be a genuine patriotic service to the whole country.

Roger Babson, the great statistician, maintains that we cannot have a return of real prosperity until we have a return of normal moral conditions, and it is the opinion of many that we cannot have a return of sound moral conditions until the housing problem is solved, congestion relieved, and it is again possible for the average young American to plan for a home of his own with some degree of certainty that he will not have to spend the remainder of his life paying for it. Rising Americans need homes, the country needs the home owning citizens, and the building industry needs the business. This problem merits the serious consideration of all branches of the building industry.

GOOD LUCK AND BAD IN BUSINESS.

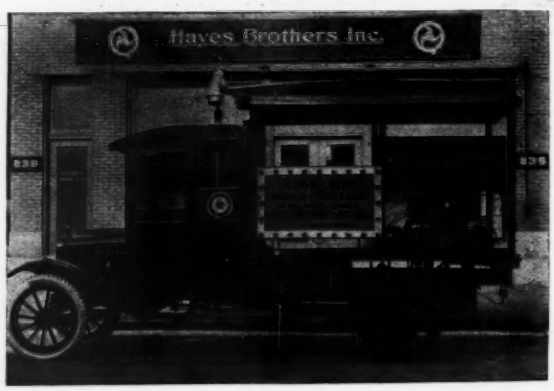
QUITE frequently when a certain firm or individual has an unusual measure of success there are many who are ever ready to ascribe that success either to good luck or even to unscrupulous or dishonest methods. Of course, the element of chance does enter into business, but that which is often called luck when analyzed proves to be untiring work directed by keen minds that refuse to quit in the face of difficulties. Some men instinctively enjoy matching wits and courage against seemingly hopeless, insurmountable obstacles. They put every ounce of mental energy into the battle and it is usually a good bet that they will win. On the other hand there are also a great many who instinctively shrink from a struggle and are content to wait for the time when "business will pick up." It is a pretyt safe bet that eventually they will lose, and as they lose blame their "hard luck." The man who would have the respect of others as a successful business man and the profits that go with business success must earn it. He cannot afford to wait for business to pick up, for even in normal times about the only thing that business will pick up of its own accord is debt. Success in business is not a matter of luck.

PIONEERING *in the* PLUMBING *and* HEATING BUSINESS

The Plumbing and Heating Industry Has Opportunities for Greatly Increased Business in the Country Districts and Also in the Cities Through the Use of Modern Advertising

THERE are times in the plumbing and heating business, as there are in practically every other line of business, when business is secured without much effort and that in large enough amounts to keep the contractors satisfied to the extent that they make no efforts to develop new fields. However, these times invariably change to periods when there is not sufficient business to keep all going to anywhere near the limit of their capacity.

This constant changing of conditions goes on in practically every industry or line of activity. At such times the industries that are fortunate enough to have a good proportion of men with foresight, initiative, and aggressiveness



One-Ton Truck, Operated by Hayes Bros., Inc., Indianapolis, Ind., with a Farm Power and Light Plant Mounted and Supplying Current for the Lights Which Illuminate the Sign on the Side.

branch out and tap new fields. These ventures often mean the outlay of considerable money and effort for which no immediate return is expected. A case in point is the automobile industry's far-sighted policy of spending a great deal of money in publicity, lobbying and other means for putting through good roads campaigns. This is done in order that the "ship by truck" campaigns which follow may result in the sale of trucks. And, of course, the better the roads, the greater the sale of pleasure cars. Another case is that of the ice cream manufacturer's recent marketing of a new product called an "Eskimo pie." With the sale of ice cream receiving its seasonal slump, and possibly a still further decrease owing to the enforced economy of many former purchasers, they used this new product, which is a chocolate coated ice cream bar, to build up new business. It has proved a most successful venture for them. Other manufacturers in entirely different lines of finding their own fields and regular channels restricted have either put out new products to compete with those in other established fields, or they have opened up entirely new fields. It is the history of a great many of the big railroads systems of this country that they have all spent a great deal of money opening up new territories in which the revenue for the first few years nowhere near paid the expense of the service but their foresight was later richly rewarded.

The plumbing and heating business in the average city today is not dead by any means, but it is not enough in many cases to keep all engaged in the business going at anywhere near full force. There is considerable work in sight for the near future, particularly in the line of home building, but in many places industrial building will not be as heavy for some time as it has been. The result will be rather keen competition on residential work. Some contractors, however, have been laying a foundation during the past few years for business that is not entirely dependent on the prosperity of the city. They have been gradually building up a substantial plumbing and heating business in the country districts. In many cases this has meant that they have had to go out and sell farm light and power plants to the farmer in the first place in order that he might have the power to pump the water necessary for modern plumbing and for a boiler and radiator heating system.

Of course, various other classes of dealers have been pushing the sale of farm light and power plants, but many of them have been content to sell any size plant that they could get the farmer to buy with the result that in many cases the farmer bought a plant that was altogether too small to take care of his needs when it was called upon to furnish water for a modern plumbing job. To overcome this difficulty quite a few plumbing and heating contractors have during the past few years taken on a farm light and power plant and have pushed the sale of them. A number, in fact, have made quite a profitable business out of the sale of the plants themselves. But most of them have considered them more or less in the nature of an entering wedge for the sale of plumbing, heating and electrical goods, for, as a matter of fact, in many cases the sale of electrical household appliances that follows the sale of the plant has proved quite profitable. However, some of the larger plumbing and heating firms selling farm light and power plants consider their efforts more in the nature of pioneer work, the opening up of new avenues for their plumbing and heating business, as is the case with Hayes Brothers, Inc., of Indianapolis, Ind., who have a man doing nothing else but develop business among the farmers. He is supplied with a truck on which is mounted a modern farm light and power plant. On the side of the truck is a sign giving the name of the plant and the name and address of the Hayes company. This sign is lighted at night by 24 electric lights, the current for which is supplied by the plant on the truck. According to this company, the lighting plant business does not do much more than break even, but this is considered very satisfactory, as it brings in new customers for plumbing and heating either directly or indirectly.

Although there are quite a few contractors who follow the

Booth Maintained by the N. O. Nelson Mfg. Co. at the Arkansas State Fair, Held at Little Rock in that State, November 11th to 19th, 1921.

same policy as the Hayes company and furnish a man with a truck to demonstrate the light and power plant to the farmer at his farm, a number put most of their efforts into interesting the farmers at their gatherings, such as fairs, etc. Particularly at fairs the farmer has the time and is in the mood to examine and consider anything new in the way of equipment, especially anything that he is convinced will increase production and lower costs. He is not so likely to be very much interested if it is presented to him in the light of a great convenience, comfort, or semi-luxury, but if he feels that it is a revenue producing investment, he is much more likely to be interested.

Many of those connected with the plumbing and heating industry have not considered it worth while to attempt to interest the farmer, but this attitude is changing as the farmer's vast purchasing power is now beginning to be more fully realized. The Kohler Company, of Kohler, Wis., is making a farm light and power plant which they are pushing in an effort to develop this class of business. Other manufacturers and jobbers are beginning to realize the value of having good displays at the various fairs and other gatherings of the farmers. An accompanying picture shows a booth maintained by the N. O. Nelson Mfg. Co. at Arkansas' first annual State Fair held at Little Rock, November 11th to 19th of last year. The various fixtures were connected up with hot and cold water. A farm light and power unit,

Exhibit of Plumbing Goods at the Jasper County, Ia., Fair by J. M. Davidson, of Newton, Ia., in the Fall of 1921.

a water supply system, and a gas water heater furnished the power, water, and heat. Accompanying this article are also two pictures of displays maintained by J. M. Davidson, of Newton, Iowa, at the Jasper county fair held last fall. It was a very attractive display regarding which Mr. Davidson writes: "We think this is a very good way to get good plumbing goods before the farm trade. Each year we have a display of some kind, and nearly everybody at some time during the fair will visit it. This year there were from 3,500 to 4,000 each day for five days, and we had a large number of inquiries and a great deal of comment on our booth. We made some sales at the fair and can trace a number of others as direct results of the exhibit. We feel well repaid for the work and expense to which we went."

The above is only one of many similar statements from plumbing and heating contractors who are finding it profitable to deal with the farmer. It sometimes requires a considerable amount of effort and time to get the farmer interested, but those who do it and keep after it eventually develop considerable profitable business. Some of those who maintain that the farmer insists on the cheapest of everything fail to consider the fact that the man of the city did not start with the most luxurious and expensive equipment, and it is hardly to be expected that the average farmer will do so either. As a matter of fact, however, he is perfectly

Miniature Bathroom, Connected Up and Illuminated by Small Electric Lights, in the Booth Maintained by J. M. Davidson at the Jasper County Fair in the Fall of 1921.

willing to pay a fair price for high grade fixtures and good workmanship when convinced that he is getting a square deal. The future will see an ever increasing number of installations of modern plumbing and heating in the country districts. Some of the pioneering has been done already, but there is still some to be done before this field will yield the amount of business that it should, can, and will.

New School Buildings for Bridgeport, Conn.

Plans have been authorized by the Bridgeport Board of Education for a large annex to the present High school and for additions to several of the graded schools, the total work to cost in the vicinity of $2,000,000. The Kossuth Street and Madison schools will be remodeled and the Waltersville school will have an addition erected. Four new schools to cost a total of $500,000 are also authorized. It is planned to have the construction work start in March.

Bids for the proposed schoolhouse at Windham Center, when opened, were found to exceed the $35,000 appropriation, when figuring in plumbing and heating, and at the next town meeting an additional $12,000 will be asked.

The Need of Standardization in the Building Industry

The Present Lack of Standardization Both in Manufacture and Installation Results in Much Waste and Consequent Unnecessary Expense. Co-operation of All Branches Needed.

By Thomas F. Hanley, Chairman of the Standardization Committee of the National Association of Master Plumbers.

WE UNDERSTAND today that the building industry of the United States is the second largest industry of record. Having had some fifty years' experience in the building trades, I can safely say that there is great room for improvement and betterment in all of its various branches. The entire building industry should be worked out with a system of standards for the purpose of eliminating waste, and multiplicity of designs, types, and methods of construction—also the non-essential materials which are now manufactured, taking up the space, the cost of production, and the loss sustained in not being able to move same. This, no doubt, is costing all those concerned in the building industry many millions of dollars yearly.

The entire building industry is badly in need of readjusting at this time, and the only method of bringing this about, in order to reduce cost and to simplify the entire work, is through national standardization.

The National Building Code Committee recently appointed by the Hon. Herbert C. Hoover, Secretary of the Department of Commerce, Washington, D. C., will no doubt endeavor to work out a system of standards, and such reconstruction as will be of great benefit in the building industry. There is great need of national co-operation, and great benefits can be accomplished through such efforts, especially so if each branch of the industry is organized to the full extent to work in conjunction with all associated branches, so that the entire work will harmonize, and be simplified in every way, and a National Code submitted which will concentrate the interests along the most economical lines. The cutting down of a multiplicity of designs and types of manufactured materials now existing, would enable the manufacturers to produce a great volume, and the more essential and better grades of material, at a lesser cost than the present system.

In this connection I would suggest that there should be a national conference board consisting of a representation of each of the various branches, including the American Institute of Architects, Engineers and Builders—also the Building Trades Department of the American Federation of Labor, for the purpose of working out a complete system of standards along economical lines, eliminating all waste and simplifying the entire industry to such an extent that it would be a great saving.

Today there is a great variance existing in manufactured materials and the method of installation in the various branches. This in itself would indicate that there is a link missing somewhere. Therefore, I contend that if the associations of all manufacturers, architects, engineers, building and labor organizations would select representatives to co-operate and collaborate during this great period of readjustment, a great deal could be accomplished, millions of dollars saved, bettering the conditions of the industry in every way, and also eliminating unreliable and non-essential materials which today are causing great expense in upkeep and replacement. The National Building Code movement is a step in the right direction, but it should be enlarged to the extent of receiving the co-operation of all those engaged in production of materials and those engaged in the installation.

We are in great need of all classes of buildings, as we have been practically at a standstill for the past five years, and no doubt there will be an expenditure of millions of dollars within the near future, which is necessary and required for the development of this country, and I am sure that now, if ever, is the opportune time for national readjustment, and advantage should be taken in this new area in the building business. The Building Trade Press can be instrumental in helping out this entire situation through national publicity.

THE AMBASSADOR'S BATH.

The Experience of an American Ambassador in Search of a Home with a Modern Bathroom.

WHEN the late Ambassador to England, Walter H. Page, wrote how the English "frantically resent conveniences," even to the extent of despising bathrooms, and how "every gentleman must have his own tin tub," no doubt he had in mind an almost desperate personal experience, says the "New York Times."

When Mr. Page arrived in London he started house-hunting. Since the American Government does not provide homes for its representatives, each minister or ambassador must secure a residence in any way that he can. One thing Mr. Page insisted upon was a serviceable bathroom. And because of this he had no end of trouble.

To quote from the "Times": "However lordly or historic a mansion might be, it would not suit him without a modern bathroom. He was compelled to make this emphatic to the agent he hired, for the latter was disposed to regard the bathroom idea as an amiable American whim or weakness, to be indifferently set aside when urging the superior claims of some noble mansion. For example, would not his Excellency consider the magnificent drawing room conservatory? urged the agent. No, his Excellency would not consider the drawing room conservatory as a suitable bathing place. He was, in fact, surprised the agent should make such a suggestion. What his Excellency wanted was a bathroom. If that could not be understood, his Excellency was sorry, but there would have to be another agent to handle the commission.

"Consequently, it took time to find a desirable house with a bathroom. But on one such being at last discovered, on inspection there was no hot water or heating system, a cold water and cold air proposition which chilled the Ambassador's flesh when he thought of the raw, foggy early mornings in mid-winter. No, he could not take the house unless these adverse conditions were rectified. Followed prolonged negotiations, in which ingenious but unsatisfactory temporary heating devices were put forward, apparently to dodge the real modern improvements demanded by Mr. Page.

"Finally, however, the agent came to Mr. Page beaming a triumph all over. He had succeeded in inducing the agent of the noble owner to give in all along the line, and—er—his Lordship was pleased to accommodate his Excellency with running hot water and—ah—a permanently heated bawthroom. Moreover, he had brought the lease made out for signature. It had been rather an awkward matter to handle, of course, but he, too, was pleased to have been successful in meeting Mr. Page's wishes."

Naturally, Mr. Page was pleased, for he thought he saw the end of his troubles. But, lo! and behold! near the end of the lease he was astonished to read a clause something like this: "That the lessee (who was Mr. Page, of course) agreed at the conclusion of his tenancy to remove all the modern improvements in the bathroom and elsewhere, and to return the house as it was before his occupancy."

Mr. Page signed the lease, thankful to at last get a decent bathroom on any terms.

AIR DISTRIBUTION *in* LARGE BUILDINGS

The Fifth of a Series of Articles on the Distribution of Fresh Air in Large Buildings, Such as Grammar and High Schools, Office Buildings, Department Stores, Public Institutions, Etc.

By Charles L. Hubbard

Department Stores.

DEPARTMENT stores are usually heated by a combination of direct and indirect radiation, the latter being installed in connection with the ventilating fans.

As a general thing, the largest crowds are found in the basement and on the first floor, so mechanical ventilation is usually limited to this part of the building.

The entire floors in buildings of this kind are usually unobstructed by partitions, except those extending only part way to the ceiling, and are therefore treated as a single room.

As in other buildings of large size, the arrangement of airways will depend to a considerable extent upon the form of construction and the available space as regards fixtures, etc. First-floor rooms are usually of considerable height, and a common arrangement is to permit a clear space of 7 or 8 ft. beneath the windows for cases and shelves. When this is done the warm air may be brought in through the window sills or directly below them, as described in connection with banking rooms, libraries, etc., thus offsetting the effect of down-drafts from the exposed glass area. Another scheme often employed with good results is to bring

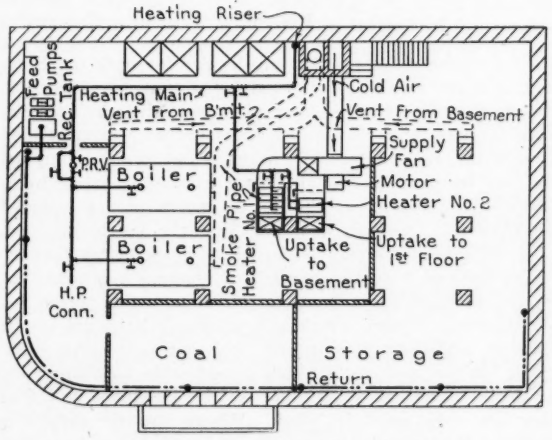


Fig. 1.

the flues up on the first row of columns and discharge the warm air toward the outer walls, as illustrated in Fig. 3, which shows the first floor plan of a large store. A portion may also be brought in through registers located in the bases of the counters, preferably at the ends where people are not likely to stand.

The surroundings of a building also have an important bearing upon the flue arrangement, as it is necessary both to supply heat along the colder outside walls and to distribute the fresh air throughout the entire room.

The building shown in Fig. 3 is located on a corner and has three outside walls. The first floor, which is warmed by hot-air, is provided with nine inlets, placed upon the columns and discharging outward as indicated. These are

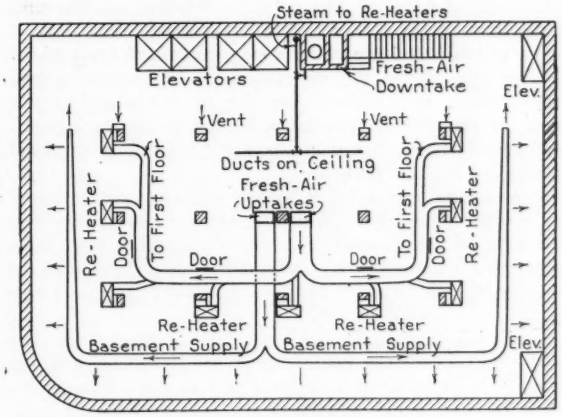


Fig. 2.

about 8 ft. from the floor and throw currents of warm air where it is most needed. Inlets of this kind may discharge the air at a velocity of 500 or 600 ft. per minute without producing unpleasant drafts, but if located in counter baseboards the velocity should be limited to about 300 ft.

In tall buildings there is a fairly strong upward draft, due to the flue effect of the building itself, and this usually provides sufficient discharge ventilation above the basement, the elevator shafts and stairways serving as air passages to the upper floors. Actual access to the outer air is due to natural leakage through windows and skylight vents in the roof.

The method of supplying air to the basement will depend somewhat upon the purpose for which it is used. If the appearance is not of especial importance, distributing ducts of galvanized iron may be carried on the ceiling, with inlets delivering fresh air at frequent intervals near the outer wall as shown in Fig. 2, which represents the basement plan corresponding to Fig. 3.

When overhead ducts are undesirable, the air may be brought in through wall flues in the form of pilasters supplied from ducts carried at the ceiling of the sub-basement.

The discharge ventilation from a basement room should be fairly strong, and the flue arrangement such as to draw

the air back from the outer walls in currents through the lower part of the room, thus furnishing fresh air along the breathing line. This is accomplished in Fig. 2 by placing vent registers along the inner row of columns, near the floor, connecting the same by means of a duct on the sub-base-

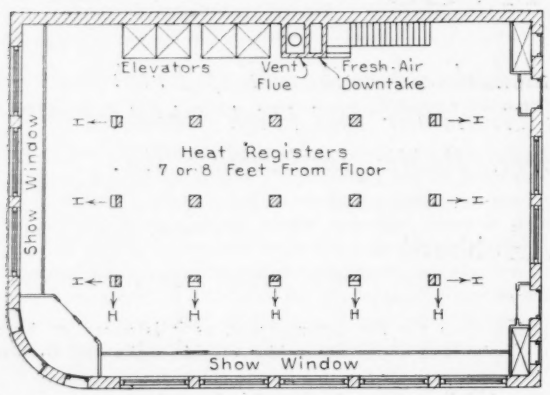


Fig. 3.

ment ceiling leading to the heated flue surrounding the iron boiler stack; this being shown in Fig. 1.

Attention is called at this point to the detail of carrying up an iron smoke flue within a brick shaft, thus heating the air within it and producing a strong outward draft which may be utilized for the ventilation of basements, toilets, locker rooms, etc., without the use of mechanical equipment. If this is not convenient, or the boiler stack is located at a distance, it will be necessary to employ a special exhaust fan for this purpose.

No particular ventilation is usually provided for the upper floors other than that furnished by the general upward movement of air through the building and natural leakage around windows, etc. In summer, conditions may be considerably improved by the use of electric fans for keeping the air in motion.

Ventilating equipment, such as fans, heaters, etc., are usually located in the basement or sub-basement, and the fresh air brought down through a special shaft from a sufficient height to avoid drawing in street dust. Separate units

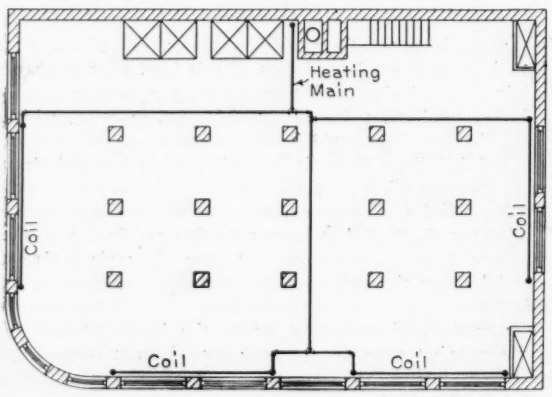


Fig. 4.

are commonly employed for each floor, and the entire radiating surface is sometimes massed in the main heaters.

In very large buildings a pair of fans may be used, one supplying each half of the floor, and each heater being regulated independently by a thermostat placed in that part of the room which it supplies.

With this general arrangement, night warming must be provided for by air rotation through the heaters, taking the supply from the basement or other interior source.

If sufficient air circulation is not obtained by gravity, it will be necessary to operate the fans at very slow speed on cold nights. In order to secure an effective air movement by gravity rotation it will be necessary to place the main heater directly at the base of the uptake flue leading to the room above, and the higher the flue the stronger will be the flow of air.

Returning now to the floor plans shown in Figs. 1 to 5, we will first refer to the basement, Fig. 2. This, as previously stated, is heated by warm air distributed through ceiling ducts. The heater, designated as "heater No. 1" in Fig. 1, is hung from the sub-basement ceiling, close to the base of the uptake flue and is under the control of a thermostat centrally located in the room above.

Heater No. 2 (Fig 1) tempers the air for the first floor, which is re-heated by supplementary heaters at the bases of the individual uptakes. The system of supply ducts between the main heater and inlet registers is clearly indicated at the basement ceiling in Fig. 2. Rotation at night is secured by opening doors in the bottoms of the heater casings.

Heaters Nos. 1 and 2 are made up of cast-iron sections, the first containing four valved groups and the second two,

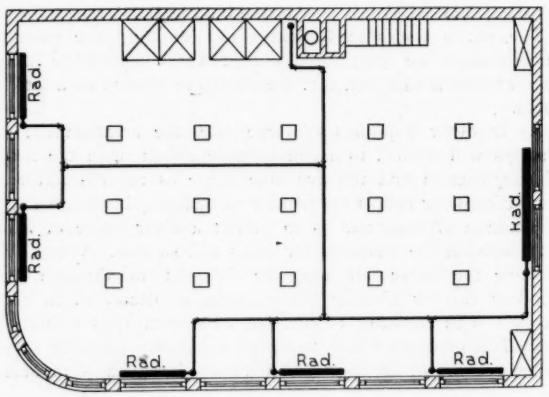


Fig. 5.

both being under automatic control. Air for both the basement and first floor is furnished by a centrifugal fan, located as shown on sub-basement plan, and driven by a direct-connected electric motor. The air is properly proportioned between the two heaters by means of adjustable dampers. The cold fresh air is brought down from the roof through a brick shaft, and led to the fan by means of a galvanized iron pipe of a size corresponding with the fan inlet.

The volume of air may be based either upon the number of occupants or a certain number of changes per hour. In the first case, 18 cubic ft. of air per minute per person for the maximum number which will ordinarily be found in the basement and first floor rooms will generally give satisfactory results, and also furnish considerable ventilation for the upper stories at such times as the basement and first story are only partially filled. Where the air supply is based on the cubic contents, there should be at least five complete changes per hour.

Receiving and shipping rooms require less air owing to the fewer number of people per unit of space, and three changes per hour will usually be sufficient.

The general arrangement of the radiation is shown in Figs. 4 and 5, which represent a typical top floor furnished with coils and cast-iron radiators, respectively. The first of these represents a case where the window sills are at a sufficient height above the floor to allow for cases or shelv-

ing, and double or triple coils of the return-bend or trombone type are carried along the tops of the cases just below the windows. In Fig. 5, the room is lower, and the windows reach nearly to the floor, in which case cast-iron sectional radiators are used, placed directly in front of them.

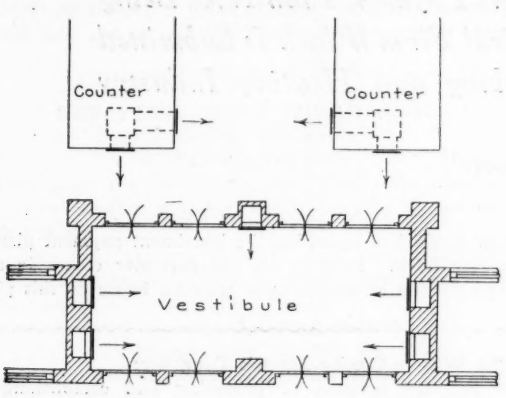


Fig. 6.

Overhead steam distribution is used in both cases, a main riser being carried to the top of the building with branches to the supply drops near the upper ceiling or in the attic space, according to the construction.

By using the downward supply, the drops may be used both for steam and condensation by the use of proper fittings, thus reducing their number by practically one half.

The boilers and the heating mains are shown on the basement plan, Fig. 1. Live steam is admitted to the main through a pressure reducing valve, being supplemented by exhaust from pumps and engines, if these are included in the mechanical equipment. The condensation is returned to a receiving tank and pumped back to the boilers.

When the building construction is such that pilasters project into the room beside the windows, double trombone coils are often placed in the recesses thus formed. If the building is especially exposed to prevailing winds from certain directions, as the north and west, the cooling effect of inleakage may be offset by increasing the direct radiation on these sides of the building. The amount of increase in such cases is usually taken as that required to warm a quantity of air equal to approximately one change per hour of the entire volume of the room.

An important detail of store heating is the warming of the entrances or main vestibules. This should be done in such a manner as to reduce the entrance of cold air, when the doors are opened, to a minimum. The best results are secured by introducing large quantities of warm air by means of a fan so as to maintain a considerable pressure between the two sets of doors. The air is best introduced at each side of the vestibule as shown in Fig. 6, and is sometimes improved by adding one or more registers which discharge directly toward the outer doors.

Sometimes it is possible to utilize waste heat from the boiler room for this purpose, provided it is free from odors and gases.

The Pacific Hotel restaurant building in Spokane is to be completely remodeled at a cost of $80,000. Extensive heating facilities will be added, and the plumbing in the building will be remodeled, with installation of rest rooms for men and women.

The Metzger Methodist Church, Spokane, is having plans prepared for a large new church building at Broad and Morton Streets. The structure will be equipped with a gymnasium.

WHEN "JOKES" COME TRUE.

By "Joe" Osier.

Speaking by and large, as I dearly love to do—

Through the medium of a piece of copy paper and a machine referred to as a typewriter or a "mill"—

I have finally arrived at the conclusion that we Americans not only relish a joke—

Especially when it is not on us—but—

That we frequently carry our joking and jesting entirely too far.

Take for the sake of an argument—

The ol' onion we are so fond of parading which has to do with the master plumber.

This worthy gentleman, in alleged funny pictures, poor poetry and puny puns—

Is ofttimes described as a man with a garage full of high-powered motor cars—

A retinue of servants, including six valets, and—

More wampum than Chief Lolly-Pop ever dreamed existed. isted.

The men who earn their right to live by toting

Or seeing that a blow pipe, torch and a sack of tools are toted—

The men, who sharpen pencils and figure and scheme and devise ways and means to break a little ahead of the game, know that the stories of fabulously wealthy plumbers are as wrong as—

Prohibition, for instance.

They know that when a man of the trade strikes "pay dirt"—cleans up and retires—that

He has it coming—because—

He has sweated and used his head for other purposes than parking place for a battered brown derby.

The chimpanzee and the Orang Outang, the original straight man and comedian, aboard Noah's ark, were the first to pull a gag—

Featuring the plumber and—

It is recorded, in an ancient copy of Vaudeville Views—that—

The monkeys gave them a big hand on it—and—

Since then the joke always goes over big in an audience of monkeys.

Wouldn't it be wonderful if the master plumbers and heating contractors the world over would really give the folks reasons for chaffing them about—

Homes like castles and rolls of bills and bonds that forty bloodhounds couldn't leap over?

I believe it could be done, providing—the boys in the game, from Rangoon to Red Dog—

Would advertise their business—go after new business—attend to their business—

And quit buying jobs.

Every Man of the Trade, I contend, seeing that I am not supporting an expensive shop and an army of journeymen—is a potential Midas—who—

It is said, ate his pie with a golden knife and bunked in a wondrous castle whose tall towers pierced the skies.

To attain estates such as this is within the province of all men and—

It is my honest opinion, freely—aye gladly expressed—that the men engaged in the plumbing and heating industry, have an excellent chance to scale the heights and reach the pinnacle.

Cripps & Kenney, of South Paris, Me., have been awarded the heating and plumbing contract on the new Opera House block to be erected at the corner of Main and High Streets, South Paris.

PRACTICAL PART PAYMENT PLAN

A Brief Description of a Simple Part Payment Plan Now Being Successfully Operated by an Electrical Firm Which Is Submitted For the Consideration of the Plumbing and Heating Industry

By T. P. Farrell

WHILE the Buschmann Instalment Payment Plan, described in a recent issue of "Domestic Engineering," has the advantage of having been actually tried out by plumbers, it may be of interest to describe another method of operating an instalment payment business originated and worked with considerable success by the Whalen-Crosby Electric Company. The chief advantage claimed for the Whalen-Crosby plan is its greater simplicity, a point of some importance in a matter of this kind.

The Whalen-Crosby Electric Company is a Philadelphia concern with branches at Newark and Brooklyn, and has been operating an instalment payment plan for about four years.

"The idea was originated at our head office in Philadelphia," said P. F. McHale, manager of the Newark branch; "our people there realized that there were many home-builders who exhausted their available funds before they reached the wiring stage; and this meant that the completion of their home was indefinitely postponed. From our point of view it meant that a good order was similarly postponed, and this set our people thinking with the result that we established our instalment payment plan. The Morris plan was brought to our notice but this didn't appeal to our management as it seemed unnecessarily cumbersome, and moreover we had an idea that there is a kind of prejudice against loan companies. We figured that we should give our instalment system a better start and be able to establish more confidence among our customers if we operated it through a banking house.

"We do not have one bank handle all our instalment business," added Mr. McHale; "there are in fact five or six with whom we have established relations in this way. We try wherever possible to use a bank that is agreeable to the customer, usually the one where he keeps his own account. This plan works better all round.

"I notice that according to the article in 'Domestic Engineering' the Buschmann or Morris plan uses about half a dozen forms, whereas we use only one (reproduced herewith). Incidentally, I notice that the Morris plan was originated by an electrical utility firm, but that is by the way.

"Another difference is that the Buschmann Company is a supply house, which means four parties to the contract, whereas in our case there are only three: The customer, ourselves and the bank. We supply the material and install it and carry the job right through.

"I notice also that in the Buschmann plan there is a recorder's fee of $2. We charge no fee of this or any other kind and we do not issue any trade acceptance contracts or use any unnecessary detail whatever. Our system is cut to the minimum of detail with the maximum of efficiency and safety: that at any rate is what we aim at. We also pay the fee for having the work inspected and passed by the National Board of Fire Underwriters, which among other things is a certificate that the job has been well done.

"Our method of operating the instalment payment plan is simplicity itself. First of all, the customer comes in and informs us that he wishes us to wire his house on this plan,

To Whalen-Crosby Electric Company:

For the purpose of procuring and establishing credit with the above company, the undersigned furnishes the following as being a true and correct statement to the questions asked below, and agrees that in case any change occurs that alters the information given below, the undersigned will notify the said company without delay.

In consideration of granting any credit by said company the undersigned agrees that in the case of failure or insolvency on the part of the undersigned, or in the event of it appearing at any time that any of the following representations are untrue, all or any of the claims against the undersigned held by the above company shall, at the option thereof, immediately come due and payable.

Further, that the exercise of, or omission to exercise such option in any instance shall not waive or effect any other subsequent right to exercise the same.

Name .....
Residence address .....
Employed by (Name of firm or individual) .....
Business address .....
Your position, if owner, so state .....
Kind of business .....
How long in present business .....
Ever bankrupt .....
Any judgments or other debts against you .....
Color .....
Have you checking account, at what bank .....
Trade references .....
If department store, coin number .....
Are you married .....
In whose name is title of real estate .....
Purchase price .....
Amount of first mortgage .....
Holder of first mortgage .....
Amount of second mortgage .....
Holder of second mortgage .....
Building and loan .....
Secretary or treasurer .....
Address of secretary or treasurer .....
Signature.....

Form to Be Filled Out by Prospective Customer.

and we tell him to go ahead and choose his fixtures and fix up the other details of the contract, such as the number of lights and so on. He also fills out the form and we begin

our investigations immediately. It is to the interest of all concerned to expedite matters as much as possible.

"If our investigations prove satisfactory, and they usually do, we put the work in hand at once, and the customer gives us a four-month note for a third of the total cost of the job. He gives us altogether three of these notes, one at the beginning and the second and third after successive periods

GET YOUR HOME WIRED NOW
Including Fixtures
NOTHING TO PAY

until after the New Year, then you begin making twelve monthly payments, which may be as low as **$15 Each.**

Ten residence engineers at your service day or evening to design the system of home electric service best suited to your needs.

Open Every Evening, Including Saturday.

Whalen-Crosby Electric Co.
High and Academy Sts., Newark
Market 9466 Market 9466

of four months each. We take these notes to the bank agreed on; who have previously agreed to handle the business; and they discount them for us. Then, we collect monthly instalments from the customer, and at the maturity of the note, after four months, we redeem it with the cash instalments collected from the customer.

"I might say," added Mr. McHale, "that we do not have any bad debts as we only grant the instalment payment plan to those who own their houses and in this way we can protect ourselves against any failure on the part of the customer. The system is now in operation at all of our branches and the results altogether satisfactory; so much so that other electrical firms are following our example.

"It may be of interest to state that we do not run any special advertising, apart from the one we have daily in "The

Get Your Home Wired (Including Fixtures)
NOTHING TO PAY

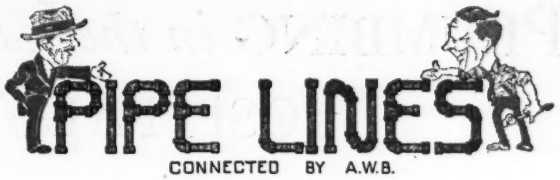
Then you begin making twelve monthly payments. Twenty Residence Engineers at your call day and evening to design THE system best suited to your needs.

FREE OF CHARGE

Whalen-Crosby Electric Co.
High and Academy Sts. Market 9466
Open Every Evening, Including Saturday.

Newark News" (samples reproduced herewith) nor do we send out any literature or other publicity matter. As to the posters put out by those following the Buschmann plan, this may or may not be a good idea; all I know is that we don't incur this expense and we seem to get on very well without it. Our instalment payment plan has certainly developed our business and we are content to continue to operate it on the lines that have proved so successful."

There then is the Whalen-Crosby system in a nutshell and readers of "Domestic Engineering" may find it instructive to compare it with the Buschmann plan, recently described in these columns. So far as the claim of the Whalen-Crosby people to greater simplicity is concerned, there is no doubt that the more simple the system the better, assuming that such simplicity does not involve any loss of efficiency or security.



WISE PLUMBER.

There was a man in our town,
And he was wond'rous wise;
He told the public 'bout himself:
It pays to advertise.

And when he saw the good results—
How folks came to his store—
He bundled up his profits
And advertised some more.

A. S. D., Fort Wayne, Ind.

A lady sent her small son to my shop with a piece of pipe. "Say," said the boy, as he entered the shop, "my mother wants you to put some strings on this."

W. J. B., Walla Walla, Wash.

QUESTIONS AND ANSWERS.

How do you connect the loops in those Ps in Pipe Lines? I see neither unions nor R and L couplings.

CURIOSITY, Seattle, Wash.

The connection was made by a union artist who used "artistic license" for couplings. This is not the same as a plumber's license, but it serves as well where the inspection is not too close. A good smoke offered to the one who will tell how to couple the couple of Ps as they should be coupled.

DO YOU REMEMBER THIS OLD ONE?

An Englishman stood looking into a plumber's window. In the window was this sign: "Cast Iron Sinks." The Englishman smiled. "The bloomin' idiot," said he, "any fool knows that cast iron sinks."

R. H., Chicago.

Many a man has made a false step by standing still.

K. C. M., Minneapolis.

THE MAID'S LAMENT.

O, how I hate to scour the tub!
For no sooner is it clean
Than someone takes another bath—
Gosh! no wonder I'm so lean.

JAY, Trenton, N. J.

A warm smile from the master plumber will go far toward melting away the journeyman's grouch.

MIKE QUINN, Scranton, Pa.

"Tariff On Metals to Be Considered," reads a newspaper headline. Evidently the government is getting down to brass tax.

FELIX, New York.

A GOOD ONE—WHEN YOU GET IT.

A manufacturer was sailing for England. A jobber suggested that he look up his friend, Lummux, in London.

"Sure I will," said the manufacturer. "Lummux, Lummux—odd name, that."

"Better write it down so you won't forget it," said the jobber.

"Oh, no need of that. I never forget. I have a perfect memory system. It never fails me. You see I associate every name with something else. Lummux I associate with stomachs—stomachs, Lummux; Lummux, stomachs—see? I've got it." And he patted that part of his anatomy where his stomach is supposed to repose.

In a few weeks the manufacturer returned. Meeting the jobber he said, "I'm sorry, but I didn't get to see your friend Kelley."

O. C., Chicago.

Pure water is the best of gifts that God to man could bring,
But who am I that I should have the best of everything?
Let princes revel at the pump, peers at the well make free;
But whiskey, wine and even beer are good enough for me.

SOMEBODY'S STENOG, Wilmington, Del.

The Eleventh Commandment: Don't take yourself too seriously.

And with that please send your jokes to Pipe Lines.

A. W. B.

PLUMBING *in the* LARGEST FIRE-PROOF HOSPITAL *in the* WORLD

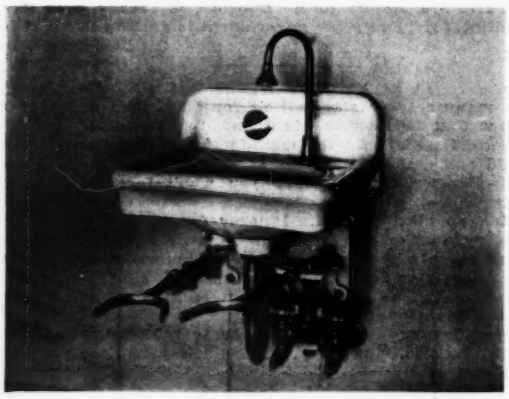
A Remarkable Installation by Wm. H. Griffith, of Chicago, in the Edward Hines, Jr., Hospital at Broadview, Cook County, Illinois

(Continued from Page 65 in the January 16th Issue.)

THE plumbing contract on the Edward Hines, Jr., Hospital included the furnishing of water supply, fire protection, rain water drainage, sanitary sewers, and all drains, wastes, vents, and supply pipes and appurtenances, and included also all fixtures and apparatus pertaining to the plumbing work.

The cold water supply is connected to a 6-inch line from the village of Maywood, and connection is made direct to the lines furnishing the water to the fixtures first passing through meters and filters, except the hot water supply, which is brought to the power house and from that point circulated by means of centrifugal pumps, through heaters, to the circulating system within the building.

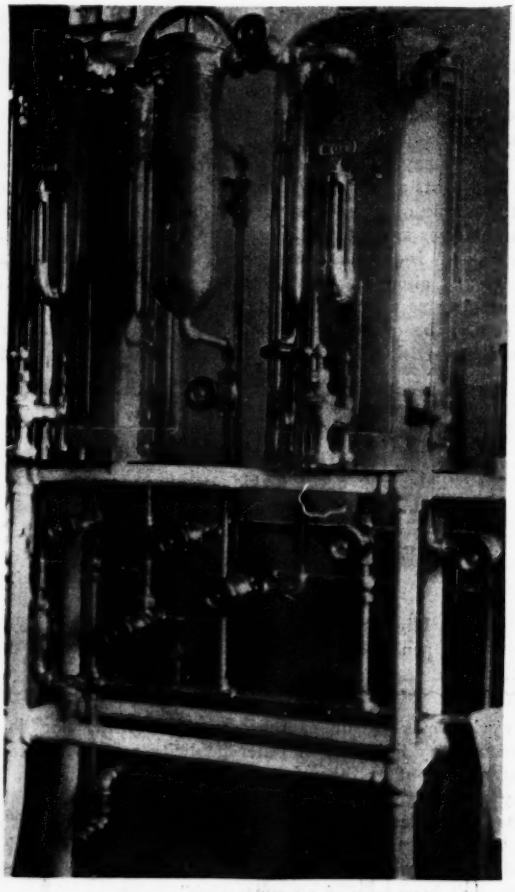
The rain water drainage sewers are connected to 18-inch and 20-inch lines, respectively, 600 and 1,000 ft. distant, and are finally discharged into the Des Plaines river. The sewage is delivered to a 15-inch line which leads to the septic tank system. This is of vitrified pipe, connected to cast iron lines from building. All underground sewers inside the building line are extra heavy cast iron soil pipe, coated with coal-tar varnish. The fittings are cast iron of same grade. All soil and waste risers are extra heavy, tarred cast iron soil pipe with cast iron drainage fittings. For waste branches smaller than 2 inches, and for 2-inch concealed risers where space does not permit cast iron hub fittings, standard weight mild steel is used tarred inside and out, and having recessed cast iron drainage fittings.



Knee Action Lavatory in Unit A.

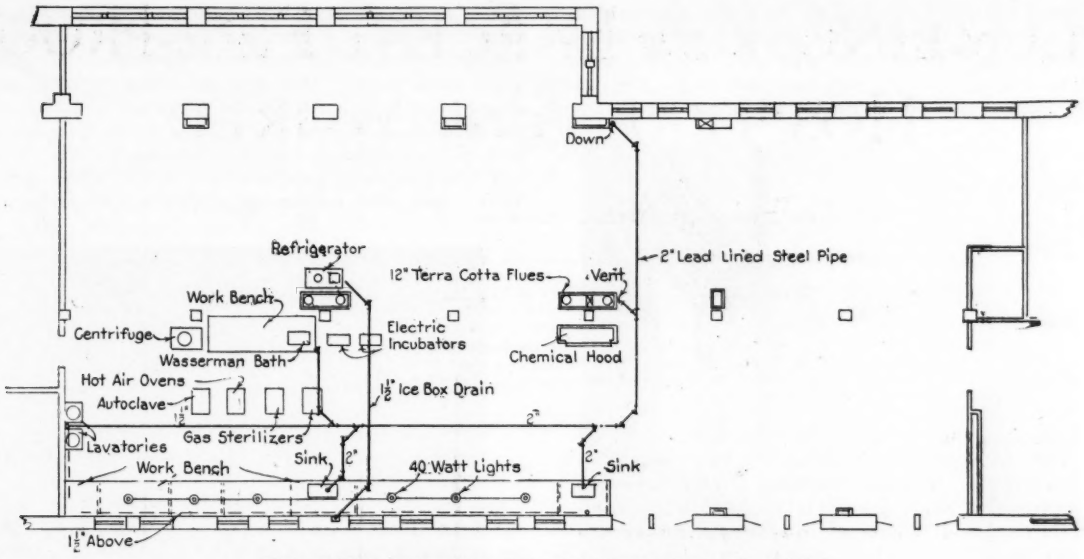
Manholes are placed at points shown on block plan. These are elliptical 3 ft. 6 inches in diameter long axis, and 3 ft. diameter short axis. They are brought up vertically to the last 12 courses of brick, where the diameter is brought in to 24 inches at a point approximately eight inches below the grade. They are fitted with standard Chicago cover. The walls are 8 inches of brick finished with cement, and the bottoms 4-inch concrete. Iron steps are provided in each manhole.

Rodding basins are installed in connection with the drain tile system. These are 24 inches in diameter and 12 inches deeper than the bottom of the drain tile. They are of 4-inch brick walls and have 4-inch concrete bottom, and are provided with heavy iron covers.



One of 38 Sterilizers in Utility Room.

Catch basins are provided to receive the waste from kitchen, laundry, and diet kitchen fixtures. These are 3 ft. in diameter at bottom, and extending 2 ft. 6 inches deeper than the lowest inlet to same. They are of 8-inch brick walls with



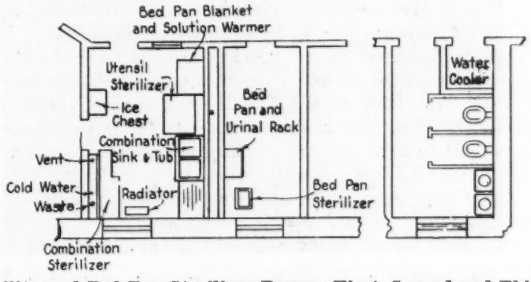
Plan of Main Laboratory, Unit "E," Second Floor, South End.

6-inch concrete bottom; the top is brought in to a diameter of 24 inches and provided with cast iron cover.

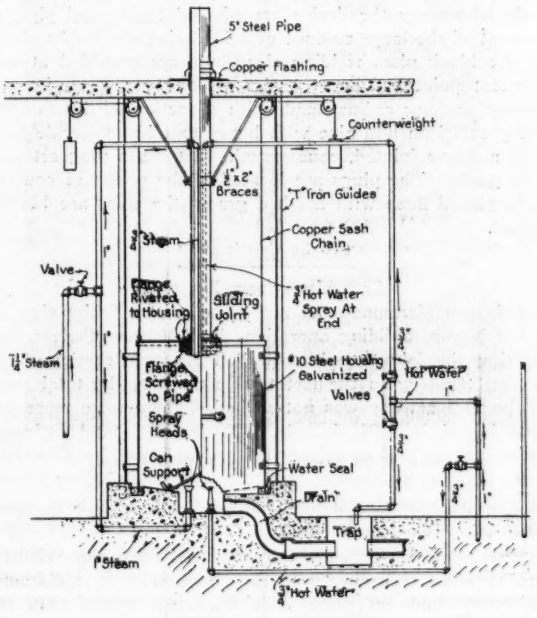
In main kichens and at serving counters and dish-washing rooms floor drains and traps with brass top are placed. In the pipe tunnels combination floor drains and traps with perforated hinge covers and back water gates are provided.

The waste branches to closets are 4 inches; slop sinks, 3 inches; special clinic sinks in utility rooms, 4 inches; shower baths, 2 inches; kitchen sinks, 2 inches; lavatories and both tubs, 1½ inches; drinking fountains, 1¼ inches; waste from other fixtures of size required by the fixture. No waste which runs horizontally in the floor or suspended from ceiling is less than 1½ inches in diameter.

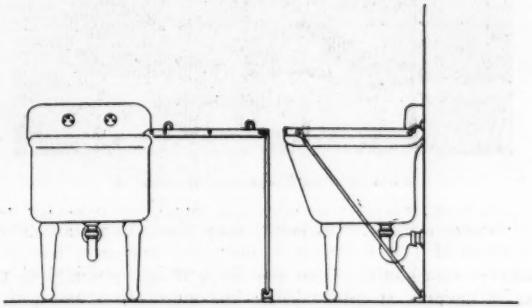
There are lines of sub-drainage tile laid in the inside of power house and pump room. These are 4-inch vitrified sewer pipe laid with close joints, not cemented. The pipe is laid in 8-inch, inside, elm wood boxes 1 inch thick. These wood boxes were laid in a 2-ft. trench and pitch 5 ft. in 100 ft. to a point where connection is made to an ejector. This is a submerged type duplex electric sewage ejector, each unit having a discharging capacity of 100 gallons per minute against a discharge head of 15 ft. The ejectors are provided with enclosed type slow-speed motors, alternating current. These ejectors are provided with automatic controlling device, so arranged that should the flow of water to the ejector pit exceed the capacity of one pump, the other will start automatically and the two pumps operate simultaneously until normal conditions are restored, when the second pump will cease to operate. Discharge pipes from each unit are 3 inches and where joined together are 4 inches. The ejector apparatus is contained in a water-tight steel pit 5 ft. inside diameter and 4 ft. below the lowest inlet. The pit is of 3/16-inch riveted tank steel.



Utility and Bed Pan Sterilizer Rooms, First, Second and Third Floors, Unit "A."



Garbage Can Sterilizer.

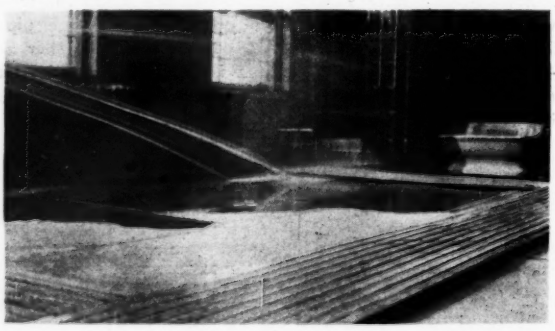


24-Inch Wentworth Tub (Pack Sink). Hydro-Therapy Room Room, 4th Floor, Unit "D."

At each refrigerator throughout the building special waste pipes are placed to receive the drips. They are 1½-inch standard weight tarred steel pipe with 1½-inch connection to a special refrigerator drain and trap. The waste risers for refrigerators above the first floor are continued

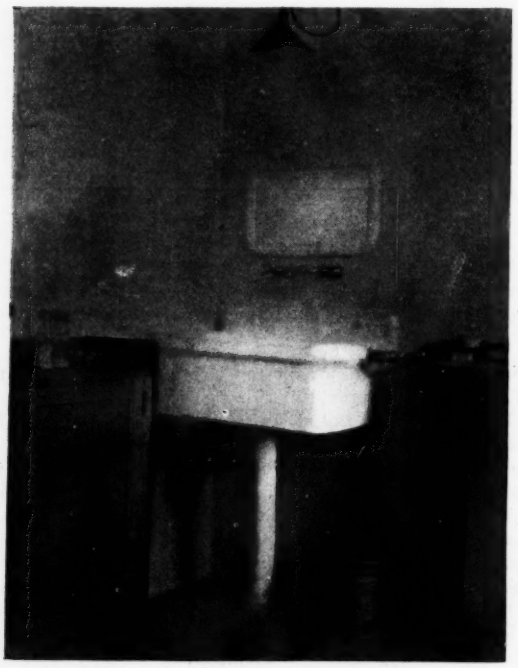
Steam Bath in Hydro-Therapy Room in Unit "D."

up through the roof with 3-inch increaser where they pass the roof. The bottom of the risers are connected to 2-inch cast iron soil pipe and discharge into pipe trenches near location of floor drains in pipe trenches.



Needle Bath, Spray, Sitz Bath and Bidet, all Operated from Central Table. Hydro-Therapy Room in Unit "D."

Vent pipe risers are of standard weight mild steel galvanized pipe. In general the bottom of these vent risers is connected up to sewers or to nearest waste and soil risers. They are continued up to and above the highest fixture and are connected at top to the nearest soil or waste riser above highest fixture, or are carried out independently through the roof. All vent risers passing out through the roof, which are less than 4 inches below the roof, are increased to 4 inches. All lines of soil, waste and drain piping are circuit or end vented. All fittings on vent lines are heavy pattern black cast-iron recessed drainage fittings. A clean-out fitting is placed near the base in soil, waste, and vent stack; these clean-out openings are provided with screwed



Laboratory Sink in Dental Clinic.

joint brass plug. All soil, waste and vent pipes above the first floor, with a few exceptions, are of galvanized wrought iron and mild steel. Some brass pipe is used, and in the main laboratory the drains are of lead lined steel pipe, on account of the large amount of acids being used. As shown on the block plan, rodding clean-outs are provided at very frequent points. These consist of long radius sanitary T fittings or long radius bend, with a section of 4-inch extra heavy cast iron hub pipe with heavy cast brass ferrule fitted with a screw jointed, countersunk, cast brass plug set flush with grade. The plugs are located in the center of concrete slabs placed flush with finished grade; the slabs are 12x12x6 inches.

(To be Continued.)

Late News from Indiana.

Although Hammond did not make a very flashy showing in the way of building operations in 1921, nevertheless, considering the labor troubles in building construction circles in that territory in the last twelve months, the total result of the 1921 activity was not so bad. There were more permits issued in 1921 than in 1920, but the total estimated valuations for 1920 exceeded the 1921 valuations by $344,814.

R. E. Fox, of Markle, was the successful bidder for the contract for the installation of plumbing in a new school building that is to be erected at Roanoke, in Huntington county. Mr. Markle has a number of other nice residence jobs that will keep this force busy for some time. The plumbing contract on the school building will amount to approximately $9,000.

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftsman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."

A CHIMNEY WITH DEFECTIVE DRAFT.

Editor "Domestic Engineering":—Enclosed you will find a diagram of a chimney built in a house in which we installed the heating plant. You will note that this chimney has an offset in it and, as the chimney does not draw we would like to know if the offset has any effect on it, and if so in what way.

Kindly look this diagram over and let us know what you think of it.

St. Paul, Minn. J. U. G.

An offset in a chimney flue most certainly reduces its value, as aside from interfering with the pull or strength of the flue, it offers an opportuntiy for soot to lodge on the lower side

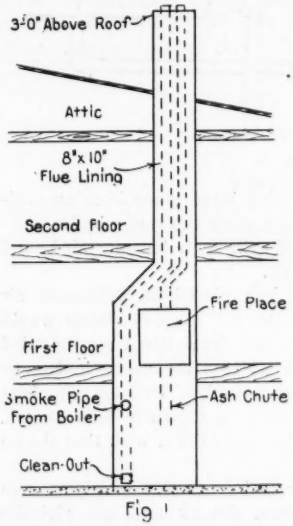


Fig 1

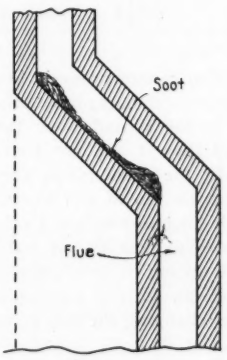


Fig 2

of the offset and thus reduce the area of it. Fig. 1 illustrates the sketch enclosed by correspondent and Fig. 2 shows the effect of the soot in partially filling the flue at the offset.

If the chimney is an old one, it doubtless needs a thorough cleaning and the most simple way of doing this is to place a few pieces of broken brick or stone in a burlap bag and with a rope lower the bag down the flue from the top, moving it up and down until the soot has been brushed down to the bottom of the chimney where it can be removed.

Should the flue be a new one, it may be that a careless bricklayer allowed some mortar and broken brick to fall and find lodgment in the offset, or, it may be that in putting in the flue lining he left a rough joint at the beginning of the offset. In the cast of the mortar, it may be exceedingly hard to remove it as it may have dried fast to the lining. In this event it may be necessary to cut open the flue from the outside in order to remove the obstruction. If the joints of the flue lining are not plastered smooth, they form a resting place for the soot.

Smoke, in passing upward through a flue, moves spirally. If the flue is offsetted, this portion of the flue acts as a separator to remove the soot and particles of solid matter and deposit them in the offset, as indicated by our sketch, Fig. 2. This in time partially fills the space and reduces the area of the flue. If the chimney was straight the most of this matter would pass out to the atmosphere with the smoke.

Note carefully that the chimney has not settled sufficiently to cause a break in the flue lining and a possible break in the division between the flues, especially at the angle of the offset. A leakage of air from the flue from the firplace into the boiler flue would seriously interefere with the draft in the latter. This may be determined by temporarily covering the top of the boiler flue when in use and see if smoke comes out through the other flue.

SAVING FUEL BY COVERING PIPE.

Editor, "Domestic Engineering":—How much fuel will be saved by covering a 3-inch steam pipe, 250 feet long, exposed to the atmosphere 24 hours a day, 365 days in the year, at a 100-pound pressure, double thick magnesia covering to be used?

We figure a saving of 27 tons of coal.

Massachusetts. M. K.

We think that the estimate that you have made of the possible saving of coal by covering the pipe is entirely too conservative. The heat loss from bare pipe will range from two to five heat units per square foot of surface per hour per degree difference between the temperature of the air surrounding the pipe and that of the steam conveyed by it. The pipe is supposed to be surrounded by *still air*. The heat loss is greatest from small pipe and less when larger pipe is used. An average loss of three heat units per square foot may be assumed for 3-inch pipe. In order to arrive at a conclusion certain facts must be considered. The temperature of steam at 100 pounds pressure is 337 degrees F. By consulting the records of the Weather Bureau we find that the average temperature for the entire year at Boston, Mass. (which may be used for purposes of calculation), is 37 degrees above zero. The temperature difference between the air and steam, therefore, is 337—37 or about 300 degrees. The pipe, 250 lineal ft. of 3-inch, contains 229 sq. ft. of surface. The efficiency of magnesia covering thoroughly applied is about 83 per cent; that is to say, by covering we will save 83 per cent of the heat lost through the uncovered pipe.

With these facts and data established we may proceed to work out the problem:

$300 \times 3 = 900$ heat units per square foot hourly loss.

$229 \times 900 = 206{,}100$ heat units the total hourly loss.

$206{,}100 \times 24 = 4{,}946{,}000$ heat units the loss for 24 hours.

Assuming that the coal burned has a heat value of 14,000 heat units per pound and that it is being used at an efficiency of 60 per cent (a very fair average): $14{,}000 \times .60 = 8{,}400$, the number of heat units actually available for heating.

Since the daily loss is 4,946,000 heat units, and since 8,400 heat units are available from each pound of coal burned; $4{,}946{,}000 - 8{,}400 = 588+$ pounds of coal, the amount lost daily. 588×365 (days in the year) shows that the yearly loss equals 214,620 pounds. This is equivalent to 107.3 short tons of 2,000 pounds or 96 long tons of 2,240 pounds. As 83 per cent of this might be saved by properly covering the pipe with magnesia, the net saving would be 89 short tons or 78.85 long tons of 2,240 pounds.

We think that this estimate is conservative as the loss is figured on a still air basis, taking no account of the increased condensation due to the effect of the wind.

HEATING A ROOM FROM RANGE BOILER AND WATER-BACK.

Editor, "Domestic Engineering":—I would appreciate your opinion about my sketch, Fig. 1, herewith.

This represents a No. 7 stove water-back, W. B., piped up to heat a coil radiator on second floor, and an 18-gallon

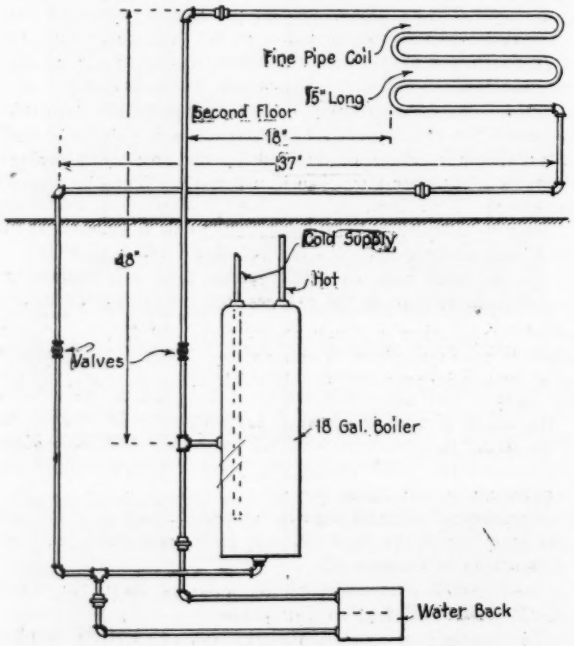


Fig. 1.

hot water storage boiler on first floor. The size of the room to be heated by the coil is 12x12x11 ft.

Do you think I would get better results if I connected from top of boiler, or as per my sketch?

Baltimore, Md. H. J.

We would hardly expect satisfaction from the arrangement shown because of several defects that are self-evident.

In the first place the coil is too small in superficial area. According to the dimensions given we estimate that there is only about 15 running ft. of pipe exposed in the room on second floor to do the heating.

If this piping is all 1 inch, the total amount of radiation is only 5 sq. ft. That may be equivalent to between 6 and 7 sq. ft. of standard cast iron radiation in heating power.

A room 11x12x12 ft. usually requires between 50 and 60 sq. ft. of hot water radiation to heat it to 70 degrees during zero weather. There is a big difference between 60 and 7. In plain words your coil is altogether too small to properly heat the room. It may take the chill off. But that is about all it can do.

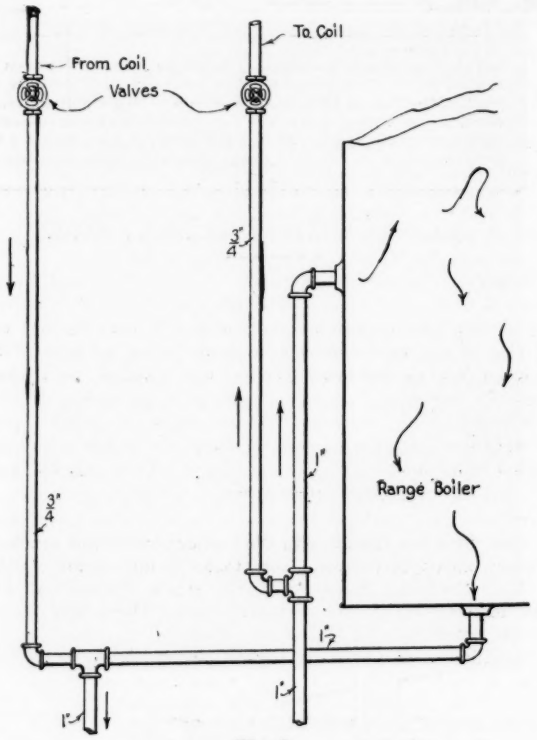


Fig. 2.

You cannot properly heat such a large space from an ordinary water-back, in addition to heating the range boiler.

In the second place the coil will soon become air-bound and then it will not heat at all.

In the third place, even if you placed an automatic air vent on top of coil to relieve the air, the coil circuit would rob the boiler unless a valve or coil circulation were throttled down to compel hot water to go into the range boiler; or the piping is proportioned accordingly. Perhaps the best you can do is to pipe up the work as shown in your sketch, but changing the side connection to conform with that shown in Fig. 2.

By taking the hot flow for coil from side of pipe which flows to range boiler as shown, the air and gas globules liberated from the water when heated in W. B. will have a chance to gravitate up and into the boiler. Gas-free hot water should then flow to coil, and thus eliminate the air-binding nuisance that certainly would be present in the arrangement shown in Fig. 1.

Furthermore we advise making the piping 1 inch between boiler and W. B., and perhaps ¾ inch to the coil which may be larger—say containing about 40 or 60 ft. of 1-inch pipe.

You would gain nothing by connecting coil to top of boiler.

You suggest that you might get better results by connecting from the top of the boiler—but you would find that you would gain nothing by this arrangement.

VENT STACKS EXPOSED TO WEATHER NOT SUITABLE FOR NORTHERN STATES.

Editor, "Domestic Engineering": I have read and studied your paper for the last fourteen years, and have found many instructive articles in it.

I now wish you would advise me if the arrangement shown in the rough sketch, Fig. 1, would be permissible. I contend that the fresh air inlet, (Fig. 1), is no advantage and vent stack should not be exposed.

The house drain from A to B is 84 ft. long and all 4-inch pipe. The branch for ladies' toilet rooms is 52 ft. long from C to D, also 4-inch pipe. The point D is a fresh air inlet just above ground. Point A is a 4-inch vent stack run up on face of outer wall.

These toilet rooms are in the basement of a community hall. Would you consider this a good layout? Is vent exposed on outside permissible? Is this fresh-air inlet of any advantage?

We have no plumbing ordinance, and therefore, have to depend on our outside reliable source of information such as we consider "Domestic Engineering" to be.

Illinois. E. M.

In some parts of the world, it is quite proper to run vent stacks on outside walls and exposed to the weather. All through the British Isles this practice prevails, we believe, and the British are very thorough in the sanitation of their little isle.

Also in our southern states, we believe, it is not uncommon to see vent pipes run on outside walls. They also are keen on having plumbing systems quite sanitary in every respect.

But there's a reason, and that reason does not apply to our own state of Illinois. The reason is Jack Frost.

In Britain and in our Southern States, Jack Frost does not interfere much with out-door vents. There they do not freeze solid.

In Illinois, however, Jack goes strong. He freezes vent stacks solid with hoar frost at times, and so blocks them

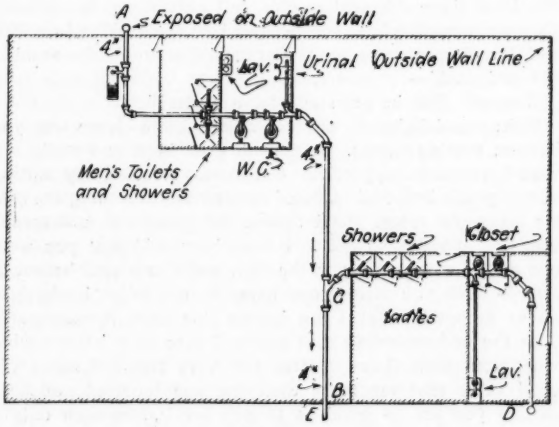


Fig. 1.

tight. That is the only reason why we in the more northern states have to run vent pipes indoors—protected from the bitterly cold winds that make us shiver every winter.

We, therefore, state that this outside vent should not be permissible in Illinois. The fresh-air inlet should not be located at D. If one is necessary at all, it should be at E, if anywhere, and the points A and D should be 4-inch vent stacks run up inside the building and out through the roof full size all the way. We are not familiar with the sewage system of your town, but if a main drain trap is required, it should be on the main drain at A in accordance with usual practice.

ABOUT HEATING CREOSOTE.

Editor "Domestic Engineering":—What capacity boiler in horse-power, operating at 80-lb. pressure, will be necessary to furnish the proper number of B.t.u. to heat the following tanks of creosote:

One tank of creosote containing 20,000 gallons with 80 lineal ft. of 2-inch pipe coil installed; temperature rise approximately 80 degrees in three hours.

Two tanks of creosote 5,000 gallons capacity each, temperature rise of 185 degrees rise in about three hours.

The two 5,000 gallon tanks above mentioned also have 80 lineal ft. of 2-inch coil.

Also advise the specific heat of creosote, and also the boiling temperature of same. The tanks are for dipping purposes.

Cleveland, O. J. H. F.

Correspondent will find that 80 lineal ft. of 2-inch pipe is not sufficient surface to raise the temperature of 20,000 gallons of creosote 80 degrees in three hours, nor will this amount of 2-inch coil be sufficient to raise the temperature of 5,000 gallons 185 degrees in three hours.

A coil, when submerged, condenses an immense amount of steam as compared with a coil surrounded by air. One authority estimates the condensation to be more than fifty times greater. Taking the heating of water by a submerged coil is an example: 20,000×8 1/3=166,666 pounds. 166,666×80 (the temperature rise)=13,333,280 heat units required. 13,333,280×3 (hours duration)=4,444,426 or in round numbers, say, 4,500,000 heat units required per hour. Assuming that the water is at a temperature of 60 deg. Fahr. and the steam at 80 pounds pressure has a temperature of 324 degrees, the temperature difference is 324—60 or 264 degrees.

Since 1 sq. ft. of heating surface with 1 degree difference between the temperature of the steam and water gives off approximately 100 heat units per hour, with 264 degrees difference approximately 26,400 heat units (264×100) will be given off in an hour, and 4,500,000÷26,400=approximately 170 sq. ft. of heating surface required. This is equal to about 300 lineal ft. of 2-inch pipe and requires a 166 h. p. boiler.

On the same basis each 5,000-gallon tank will require, for a temperature rise of 185 degrees in 3 hours, approximately 97 sq. ft. of surface, equal to about 160 lineal ft. of 2-inch pipe and a boiler of nearly 100 horse power. In determining this and the boiler capacity required for the larger tank it is figured that the condensation of 1 pound of steam at a pressure of 80 pounds gives off approximately 885 heat units. The larger tank requires 4,500,000 per hour. 4,500,000÷885= approximately 5,000 pounds of steam required per hour, equivalent to 166 horse power.

Commercial creosote consists of that portion of crude coal tar from which the light oils and pitch have been removed. Essentially it consists of:

1.—A small percentage of tar acids or light oils which distill below 205 degrees Centigrade.

2.—Napthalenes which distill between 205 and 255 degrees Centrigrade.

3.—Constituents of an anthracene nature distilling above 255 degrees C.

Distillation of coal tar by the Von Schrenk method, as reported in the proceedings of the American Railway Maintenance of Way Association, 1908, showed a specific gravity at 38 degrees C. of 1.055 and a percentage by weight of distillation of 22.56 at from 315 to 355 degrees C.

Any attempt to determine the absolute composition of coal tar creosote is attended with much difficulty, the specific gravity and boiling point varying with the composition of it. Wood tar creosote boils at from 205 degrees to 225 degrees and its specific gravity varies from 1.037 to 1.087. The specific gravity of coal tar creosote seldom exceeds 1.05 or 1.06.

The Salesman's Corner

SELLING "COLD AIR REMOVERS."

George T. Harvey.

Calmly ignoring the sign, "Salesmen Admitted Only on Tuesdays and Fridays," the somewhat little Mike Quinn—five feet one and one-half inches—turned the highly polished door knob of Mr. VanHorn's office and walked into the outer sanctuary, beyond which no one was expected to pass until the name had been taken in to Mr. VanHorn.

"Mr. VanHorn in?" asked Mike of the boy in a green uniform with brass buttons.

"He is, Mist'r; but"—

"Then I will see him," he said graciously, as he gently pushed the boy aside and opened the mahogany gate over which he was keeping guard.

"But Mist'r, he doesn't see people only on"—

"That so, boy? You don't say! With this he approached Mr. VanHorn's door and walked in. He was so palpably a forbidden salesman that Mr. VanHorn's frown would have caused chills to travel up and down the average spine, but it had no such effect on Mike.

"Good morning, Mr. VanHorn," he said with air of a person addressing an inferior. "I hope you are well this morning. But, then, any one ought to be well with such lovely weather as we are having, especially so near Christmas. Such a nice office as you have, once you get up here. That's a fine rubber plant you have, the leaves look so glossy and healthy, and there's a new one coming out, isn't there? I like to see plants in a man's office at this time of the year. Shows refinement. It's a theory of mine that when a man loves plants and flowers there can never be anything so very bad about him. You take a man that"—

"Excuse me, Sir, but this is a very busy morning with me, and"—

"Of course it is. I wonder if there is any morning when you are not busy. Do you know that you look to me like a man who could never do anything else but keep busy? Seems to me you have 'I do things' written all over you. Then, of course a man at the head of so many great enterprises as you are would naturally have little time on his hands. But, then, I am always busy myself; and, do you know, I am glad of it. I am a person who always likes to be doing something. That's one reason I took up salesmanship. It puts one out into the world of action and sweeps him along with the great, restless, irresistible tide of—if you don't mind, I will sit down. Thanks." Mike helped himself to a chair before adding: "Your name, Mr. VanHorn, has been given to me as that of a person sure to be greatly interested in one of the greatest cold air removers ever put on the market, suitable for your new home which you are building. I am giving a few carefully selected persons the privilege of purchasing only one at a rate much less than that offered to the general public. This is because, Mr. VanHorn, we know the value of a name like yours on our books, and we— By the way, are you related to the VanHorns of Wilkes-Barre, Pa? I spent several weeks in Wilkes-Barre last year and remember meeting some charming people named VanHorn. It's an old Irish name, isn't it? It has a kind of an Irish sound, and seems to me that I once saw somewhere the VanHorn coat-of-arms. Now, where was it I saw that? I feel sure that I saw it somewhere, and it seems to me that the Wilkes-Barre VanHorns said something about it to me. They were people of high intelligence and great refinement, and they bought one of my new cold air removers. The manufacturers of this great apparatus asked me this morning if I had yet given you the privilege of purchasing this heater for your new home, and I was obliged to admit, I"—

"Beg your pardon, Sir, but I don't care to"—

"What a fine looking young lady that is in that frame on your desk. Your daughter? Do you know I was sure that it was your daughter the moment I looked at it? Resembles you very closely, but I should say that she had hardly your firmness of character. Her chin is not quite so square as yours, but that may change as she grows older. Any thing I do admire in a young lady, it's firmness of character. These girls who are moved by every wind that blows claim little of admiration or respect. One has only to look at you to see that you are a man of great character. And do you know that it really takes a man of that kind to fully appreciate a heating apparatus with all the improvements which you see on this illustration, the inner construction and the beautiful hinges and knobs on the doors. I am sure that it appeals to a man of your superior and critical mechanical taste. Do you know that I think that the beautiful and artistic oxidized radiator adds so much to the enjoyment of beauty? I would rather have one handsomely and artistically made up heater than a dozen furnaces just as good in their real quality, but with poor and cheap linings. I knew that you would be interested in this beautiful apparatus as soon as I saw the artistic and harmonious effects in your office. The cute little office boy in the dark green suit and the brass buttons exactly harmonizes with the rich dark mahogany furniture. It is a real pleasure to allow a man of genuine taste the privilege of seeing this great cold air remover. It is simply a casting of pearls before swine to show a perfect heater to some men; but you—well, it is really a joy to meet a person who—allow me; I want you to note the great strength in the grate bars. We spent months on these grate bars alone, and"—

"I don't want"—

"Of course you wouldn't want any but the number 999. We have three different grades, but only those in ordinary circumstances purchase any but this beautiful oxidized no. 999, and Mr. Smoot, your next door neighbor, took the number 999 and said"—

"Smoot? Did he get stung for a heater?"

"Oh; you delightfully comical man; what a clever way you have of putting things. A man of your keen and ready wit would certainly appreciate Christmas morning by sitting down by this beautiful oxidized register and watching the cold air leave the room. 'Did Smoot get stung for a domestic utility?" That is so jolly. I have been told that you were one of the wittiest men in the city, and I can well believe it after— Will you write your name in my order book right under Smoot's? But I am letting you have the apparatus with the understanding that you will give us a letter saying what you think about it after you have tested it out. We shall value that far more than the one hundred and fifty dollars you are so good as to pay for it, although only a dozen or two persons can have them at that price. Twenty-five dollars today, please, and the rest when it is delivered. Thanks! It is really a pleasure to sell a gentleman like you a Quality heating apparatus. So much discourtesy in the world that when one meets with a kind of a true Irish type of chivalry and courtesy it really lessens the burdens of life. Good-by, Mist'r VanHorn. Don't rise to open the door for me. So glad to have made the acquaintance of one I had so long admired for his business sagacity and public enterprise. Do you know I really think you would have made a splendid salesman yourself? So irresistible in your arguments and so firm in—Good-by; here is the cute little lad in his green and gold uniform, to show me out as politely as he showed me in. Nice boy; Good-bye."

Six Definite Things That Workers Want*

3. *To See the Wheels Go Round*

By James H. Collins

(Copyright, 1922, by J. K. Novins.)

AT THE PEAK of war production, a New England plant began paying its employees a bonus of one week's wages every three months, with two week's pay at Christmas. Every time the bonus was slipped into pay envelopes a letter went in too, speaking of business conditions. Thus, employees understood that this extra money was not a gift, but extra earnings, their dividend on good times.

When depression came, employees felt that the bonus must stop. To their surprise, there was an extra week's pay when the next bonus day came round. This time, however, the letter speaking of business conditions explained that, as the mill had only been working two to three days a week for several months, an early reduction in wages would be necessary. The reduction was adopted without protest—everybody knew that it was inevitable, caused by outside business conditions, beyond the control of the management.

The large number of employee periodicals published by business concerns throughout the United States is sufficient proof that workers like to know what is going on in the organization of which they are a part. They want to see the wheels go round. Such periodicals print pages of personal items that serve the same purpose as the items in the country weekly. But there is even keener interest in solid articles about current business conditions, company policies, technical equipment and methods, the work of different departments. In a widely scattered organization like that of a telephone corporation, for example, the worker in the accounting department may have little opportunity to become personally familiar with the people and methods in the operating or wire chief's rooms of the many exchanges, the routine of long-distance traffic, the repair department, the gangs that erect new lines across states or repair sleet damage. Yet through their employee magazines, telephone people keep track of the service as a whole, are better fitted for their own work because they understand something about the work of others.

Workers in a certain eastern organization have a spirit that can be illustrated with a story. A customer persuaded one of its girl stenographers to become his secretary, at an increased salary. In a couple of weeks he came in and said she was homesick for her old associates, and asked if she might be taken back, a request that was granted. This organization has an atmosphere of friendliness and service—even the fifteen-year-old office boys show it in their alert courtesy to strangers. That spirit has been created largely by showing, through the printed word, opportunities for advancement—the personal stories of men and women who have risen as they learned different branches of the company's work and developed personal ability. The wheels of promotion are purposely kept in plain sight.

Not every business concern is large enough or rich enough to publish an employee magazine—certainly not of the kind issued by one Middle-Western manufacturing company which is said to pay its editor $10,000 a year. Apart from printing and paper costs, writing and editing, such a periodical involves a great deal of work. But there are other ways, involving little expense, by which employees can be given information about a business—slips in pay envelopes, announcements on bulletin boards, talks at employee gatherings and special exhibits that make information visible.

During the difficult downward adjustment of wages, when pay envelopes were shrinking two ways—in wages per hour, and the number of hours' work—the personnel director of an eastern factory used a simple device to show that the cloud had a silver lining. Wages were falling, but the cost of food, clothing and other items in living expenses was falling too. Taking wages in that plant, and the government's commodity-price figures month by month, he showed by two thermometers that, while wages had dropped 20 per cent in a year, the purchasing power of a dollar had risen a little more than 25 per cent in the past six months. By changing his thermometers each month he set employees thinking of what the economists call "real wages" instead of dollars—the purchasing power of the money they earn.

There was considerable carelessness among the employees of another concern in using supplies—little things like thumbtacks, clips, twine, wire. One night the junk and sweepings of the plant were turned over to the purchasing agent, who sorted out different things, tagged them with the prices he was paying for each article, and arranged them in an exhibition. It was an interesting show. Some fellow had tied up a package of rubbish, thinking he was helpful. But he had tied it with sixty-five feet of good copper wire, worth not less than fifty cents! Another package was tied with a special kind of thread worth two dollars a pound. Screws, bolts, nails, small tools and the like, all fit for use again, had been swept up from the floor. One practical way of saving such things was indicated by two tool bags. Sloppy Sam's tool bag had everything jumbled together so that nothing could be found, while the contents of Orderly Otto's tool bag were shown as he sorted the different things out every night, and packed each where he could immediately put his fingers on it.

Every employer has some information by which to estimate current business conditions, forecast the future and plan output. He may know that six months hence the work force will be decreased. He is already trying to make the shrinkage as small as possible. Employees might help in a half dozen ways if they knew—economy of materials and time, attention to quality, more intelligent teamwork. But lacking knowledge about conditions, and fooled by present activity, they may be thinking about a wage increase—"Aw, the company's rich, and can stand it!" Put in simple diagrams, the Old Man's data, the footrule he puts on business conditions, would be interesting to employees and give them a viewpoint based on facts.

*Editor's Note: Domestic Engineering submits the ideas in this series of articles for the information of its readers, but does not wish to be considered as either opposing or approving them.

Giving employees better information about the business will correct much misunderstanding about their personal interests—concrete things like wages and hours which they see close at hand. Better information is even more effective in creating better understanding between different departments, and taking up expensive slack.

When readjustment loomed up, Henry Ford found that he would need forty-odd million dollars to meet early obligations. Wall Street discovered it too, and hurried to suggest a loan. Mr. Ford declined to borrow, closed his plant down six weeks for an inventory to find out where he stood, and raised the money by cutting out inter-departmental slack and stimulating teamwork. There were ninety-three thousand finished automobiles on one hand, and a sales organization capable of increasing its activities on the other. When the sales force knew what was necessary, it sold the cars. There was a war-swollen supervisory organization of desk men. The desks were sold, and the men offered production jobs in the factory. Mr. Ford owned a railroad by which, through quickening the traffic in both raw materials and finished cars, he cut down the material and finished product investment nearly $30,000,000. Had these drastic changes been attempted without letting employees see the wheels. there would unquestionably have been misunderstanding and opposition. By making the whole situation plain to everybody, there was such teamwork that the labor and overhead cost of building a "Ford" dropped nearly ten dollars a month during the next six months.

After making a study of two hundred employee publications, Professor Robert B. Park, of the University of Chicago, says that while most of them seem to be edited *for* the employer and *at* the employee, yet their publication assumes that the relation between employer and employee is not one of mere money, and that there is nothing that so satisfactorily ameliorates between employer and employee, and maintains morale, as a well-conducted employee publication. This conclusion may be broadly applied to all honest information given employees by employers, by whatever method distributed. The remarkable increase in such information is not wholly voluntary on the part of executives —it grows because there is a genuine employee demand for it.

NEWARK, N. J., TO BUILD UP-TO-DATE PUBLIC COMFORT STATION.

Newark is to have one of the finest and most up-to-date public comfort stations in the world. Bids will be invited within the next few weeks on this improvement which is to be one of the outstanding features of Newark's new Public Market Building. Plans for the comfort station have already been drawn, and while full details are not yet available, it is understood that the sum of three hundred thousand dollars left over from the appropriation made for the Public Market is to be expended on this feature. The comfort station, it is said, is to be modeled after the washroom of the Pennsylvania Terminal of New York City, and is to contain an ample number of pay-toilets, free toilets, wash-basins, and drinking fountains, and also telephone booths and other conveniences. Hooper & Co., of 116 Market Street, are the architects, and it is understood that the work on the exterior of the structure will be on a par with the interior.

The decision of the authorities of Newark to include this great public convenience in the plans for the new market structure is in a way a triumph for the Public Comfort Station Committee of Newark, a body of public-spirited citizens who, as told some time ago in "Domestic Engineering," have been working for more than a year to awaken the people of Newark to the necessity of providing comfort stations on the city's streets.

"We are delighted to learn that Newark is to have one of the finest comfort stations the world has ever seen, and that plans have already been drawn up for this project," declared Arthur J. Smart, vice-president of the Citizens' Committee, to a representative of "Domestic Engineering." "That is not the whole story, however, nor the best part of it. Within the past few days we have been assured that this particular comfort station which is to be a part of the new public market structure is only a forerunner of what the city of Newark is going to accomplish along these lines within the next twelve months. Former Mayor James P. Gillen, who is now Commissioner of Parks and Public Places, has told our committee that during the coming year three or four additional comfort stations are to be built, and Mayor Archibald has given us to understand that he is in full accord with our campaign, and that an appropriation for additional comfort stations will be asked for when the question of the January budget comes up for discussion.

"The sum of $96,000 has already been appropriated for a comfort station on Clifton Avenue, and, with the other improvements contemplated, it is evident that Newark is soon to lead the world in the matter of sanitary conveniences. The work of our Citizens' Committee, however, is by no means finished. We are now inaugurating a campaign to educate the public in the proper care of comfort stations. We believe that this is as important, or almost as important a function of our committee as the agitation for comfort stations, and we are preparing to launch this educational campaign before the work on the structures is started so that we can be sure that the conveniences will not be abused when they are open to the public.

"Our president, Wellington Wack, will fire the opening gun of the campaign, on January 19th, when he will address the monthly meeting of the Newark Real Estate Board, and will urge that laws be enacted imposing severe penalties for abuse of the sanitary conveniences provided for the accommodation of the public.

"I have recently completed a tour of inspection of various cities with a view to obtaining data on legislation of this sort. I was particularly struck with the efficient way in which Asbury Park, N. J., takes care of its public comfort stations and the local laws which enable the authorities to maintain their standards in this respect, and it is probable that our committee will urge that Newark enact legislation along the same lines."

Tell Him Now.

If with pleasure you are viewing any work a man is doing,
If you like him or you love him, tell him now;
Do not withhold your appreciation till the parson makes oration,
And he lies with snowy lilies o'er his brow;
For no matter how you shout it, he won't really care about it,
He won't know how many teardrops you have shed;
If you think some praise is due him, now's the time to slip it to him,
For he cannot read his tombstone when he's dead.

More than fame and more than money is the comment kind and sunny,
And the hearty, warm approval of a friend;
For it gives to life a savor, makes you richer, stronger, braver—
Gives you heart, and hope and courage to the end;
If he earns your praise, bestow it; if you like him, let him know it;
Let the word of true encouragement be said—
Do not wait till life is over and he's underneath the clover,
For he cannot read his tombstone when he's dead.

—Exchange.

WHEN PEOPLE KNOW WHAT YOU KNOW

EDITOR'S NOTE:—By using one of these Editorials each week in your newspaper advertising you will help to educate your community in the true facts of plumbing and heating merchandising. Such education will create good will and build your business. The more the public knows the better your service will be appreciated. Take one Editorial a week and reprint it in the upper left corner of your regular advertising space. Have it set in bold-faced type, with rule or border around it, as indicated on this page. This will cause the Editorial to stand out and make it easy to read. The use of these Editorials from week to week will not add a dollar to your advertising expense, but they will help along sales.

ALL of us wear shoes. We always have and we always will. We begin each day by putting them on, and end each day by taking them off. Our shoes become a part of us, yet what do we know about them? Little or nothing, as a rule. If you could have watched the making of the pair you are now wearing, you would have seen them pass through fifty-eight different machines. And to see all this—to know exactly how they are made—to know precisely what went into them—would give you a keener appreciation of shoes. Just so. But most people never have a chance to see the fifty-eight wonderful machines. Neither do they know about a hundred and one other things that go into the making of the shoes they wear. And because they don't know, they kick and shout "robber!"

A Series—No. 10.

"LITTLE DROPS OF WATER LITTLE GRAINS OF SAND—"

YOU know the rest of the old verse—the ocean and the land part of it. The thought is this:. It takes a lot of little things to make a great big thing. The little things have made plumbing big and fine; have changed it from a trade to a science; have given the world its prize comforts and conveniences.

Anybody can see a bath tub or a closet or a lavatory. They are the big things, and big things are easy to see. But the big things would not be worth house-room were it not for a host of little things—the little things you don't see and maybe don't even know about. These little things are pipes and valves and traps, and this and that and the other. They are out of sight, but they are there. You can be sure of that. If they were not there you wouldn't be able to use a bath tub or a closet or a lavatory.

Keep in mind the little things. They make possible all the conveniences and comforts that only good plumbing can give. If you would watch the plumbing of your home, and see how each little thing is fitted into its place, you would more thoroughly appreciate the work of the plumber. Then, too, you would realize as never before the reasonable charge that is made for a real job of plumbing.

And so, without straying further from the field that is closest to us, people kick and shout about plumbing and heating for the same reason that they kick and shout about shoes. They don't know, and a person who doesn't know usually exercises his ignorance by kicking and shouting. And that is not the worst of it. Others, who are just as ignorant, hear the shouting, believe it, and add their voices to the wailing chorus.

There is nothing that will stop the kicking and shouting but education. If it were possible for all people to know today what all plumbers have known all the time, every voice in the land would be raised in favor of plumbing. The voice of the people is slowly changing. You can see and hear and feel the change. And this change is being brought about by education.

Little Things are the Things that Count.

Every point that is made to reach the public marks another step toward better business. Each point is a very little thing—only a short step—but the little things are the things that count. A plumber can't take a customer through a factory and show him how each part in a water system or a bathroom is made, assembled and installed. He can't do that. But he can do the next best. He can maintain a good display in his showroom, and he can keep hammering home the little vital things of the trade through advertising, letters and talks with prospective buyers. Like the "Little drops of water and little grains of sand" in this week's Advertising Editorial, constant hammering drives the right thoughts into the public mind. Thus little thoughts gradually create big thoughts. And big thoughts bring home the bacon.

In dealing with the public—in trying to educate it—think of the public as knowing absolutely nothing. We often think that because we know a thing, other people must know it. This is a mistake. The public in general knows very little until it is told, and then it forgets most of what you tell it. Because of this we must tell the world over and over again. Never stop. Tell what you have to tell, and tell it so often that the public can't forget.

There are so many hundreds of little big things in plumbing and heating that the education of the public seems like an endless job. But it isn't. It might be impossible to tell everything, but it is not impossible to hit the vital points—hit them hard, and hit them often. If this is done, the vital points will carry the public a long way in the right direction.

A Little Thought Sold a Shower.

A man in Chicago had been reading about a bath a day. This reading started him to thinking. From thinking grew desire. The man called on his nearest plumber. He said something like this: "I have been thinking about putting a shower in my bathroom. But, you know, I can't stand a cold shower. It makes me shiver—gives me goose flesh. What do you advise?" The plumber knew his business. He had been reading and doing some thinking himself. This was his advice: "Buy a shower by all means. You don't have to take a cold shower any more than you have to take a cold bath in a tub." You see the man had associated the shower with cold water. That was the little thing in his mind, and it was that little thing which was causing him to hesitate. "You can take a warm shower," continued the plumber, "or start the water warm and let it grow cool. You can regulate the water until you get the temperature that is exactly suited to you. When you have found the right temperature you wouldn't be without a shower." And this little thing—a little thought you would think everybody knew—made a sale. Let us emphasize the little things of plumbing until all know what we know.

Trade Opinions

In this Column "Domestic Engineering" offers an Opportunity for the Expression of Signed Opinions on Problems of General Interest to the Trade, but reserves the Right to Edit or Reject any and all Contributions.

FATAL EFFECTS OF SEWER GAS.

Editor, "Domestic Engineering":—Am enclosing clippings of two different newspapers furnishing accounts, which will serve to strengthen and keep alive the oft-denied claim of many plumbers, that sewer gas is not only injurious to health, but deadly. And so, while this account gives the name of a man killed by sewer gas, and the name of a physician (Dr. Hamson) who states that sewer gas was the cause of death and other particulars connected with the case, it also tends to weaken the position of those who seek to minimize the importance of the plumber as a guardian of the public health.

From the Denver Post of December 29, 1921.

Sewer Gas in House Blamed for Death of Gunnison Man.

John Connors, state plumbing inspector has been called to Gunnison to investigate the death of Roy Morris, a carpenter. Morris died a few days ago under mysterious circumstances. His case was diagnosed by his physician as sewer gas poisoning and Connors has been asked by the city authorities to determine whether this diagnosis is correct.

Morris' house, containing some old-fashioned plumbing, was connected with the sewer by a local plumber a few days before Morris was stricken. A day or two before he died a canary bird was found dead in its cage.

Before starting for Gunnison Connors, acting on the presumption that the physician's diagnosis is correct, ordered all members of Morris' family out of the house.

From the Gunnison News-Champion of Dec. 16, 1921.

Ray Morris Is Victim of Death.

The sudden death Saturday noon of Ray Morris, splendid young citizen of our city, and the belief expressed by the attending physician that it was caused by sewer gas poisoning, due to defective plumbing, caused a great deal of comment in Gunnison this week, the deepest sympathy being expressed for his wife and daughter, who were so suddenly bereft.

Mr. Morris was a young man in the prime of life, and apparently of most vigorous health. He came to Gunnison a year ago from Denver, being associated with A. H. Chipperfield in the carpenter business, and living with that family until three months ago, when the Morris family moved into the house alongside. Considerable difficulty was experienced with the plumbing, which was alleged to be out of order and after unsatisfactory negotiations with the owner, Mr. Morris had thrown up his lease and packed his household furniture, preparatory to moving to Denver this week to work at his trade until the spring. A pet canary bird had died recently in the house whose condition seemed to point to sewer gas poisoning, although there is difference of opinion among doctors as to whether this unusual cause was the instrument of death in this case.

Mr. Morris had been feeling unwell for several days, was taken violently ill Saturday morning, and died in convulsions at 12:30 that day.

My object in mailing you these clippings is to furnish additional proof of our importance as plumbers and to show the importance of the plumbing trade. To give the trade the benefit of the facts herein related they should be circulated, and inasmuch as I believe your journal would be the effective and proper thing for that purpose I would ask you to be kind enough to insert an article with ample expression of the subject.

Yours respectfully,

Gustaf N. Nelson.

DISCUSSES BUSCHMANN PART PAYMENT PLAN.

Editor, "Domestic Engineering":—We have noticed with a great deal of interest the article in "Domestic Engineering," describing August Buschmann's "Part Payment Plan."

We thought you would be interested in hearing our views in the matter. This matter we consider not practical or to any great advantage to either owner, plumber, or jobber. We believe, eventually, that Mr. Buschmann is going to get into deep water.

In the out-start we wish that you would kindly understand our position. We are not pessimistic, neither do we want to tear down something that is constructive. As a jobber we consider this part payment plan entirely out of the scope covered by any legitimate jobber.

Take in our city, there have been operating for years building and loan associations whose business is to finance any home owner who wishes to remodel his house or build.

Any man can go to a building and loan association in the city of Dayton and secure on a ten year payment plan 60 to 70 per cent of the price of the investment. The payments can be arranged weekly or monthly and are only a trifle more than what he would pay as rent, in case he did not own his property.

Say, for instance, an owner would like to put in a new bathroom in his house; he could go to any building and loan association in the city of Dayton and secure more than he would secure in building his house complete. In other words, we have known of cases where the owner has been able to secure approximately 80 per cent of the purchase price. So. you see we have been covering exactly what Buschmann is trying to do and have been doing it for years very successfully. In other cases where there are no mortgages on the houses, the owners can secure the full amount necessary to install modern bathrooms and pay it on a ten year basis, not ten months. Neither does he pay 10 per cent for financing.

We believe that the city of Dayton stands foremost amongst cities in that the majority of houses are owned by the home builder.

One great point we wish to bring out and that is that Buschmann's plan does not encourage the plumber to be a merchant. Our experience has been that the best the manufacturer and jobber can do for the plumber is to assist him to help himself, in other words make him a merchant. To be a merchant he must be able to finance his own business, make his own collections and meet his own obligations with the jobber. The more you try to run his business the poorer merchant he is bound to be. We believe that the Buschmann plan is very much operating against the National Trade Extension Bureau, which is doing a great deal to make the plumber a real merchant.

We hope that you will please understand our spirit in this matter, as it is our intention at all times to stand for the elevation of our industry.

THE W. H. KIEFABER CO.,

Dayton, O. W. H. Kiefaber.

Henry Ford sent over three men to Germany to pick up a few first class factories "for next to nothing." Ford got a cable from them Wednesday saying: "Not an idle factory in whole of Germany. None worth while for sale. If you want a factory here, you must build it."

FREQUENT BATHING PROMOTES INDUSTRIAL EFFICIENCY

Dr. George M. Price, Director of the Joint Board of Sanitary Control of New York City Points Out the Importance of Adequate Sanitary Equipment in Industrial Plants

AN ENTHUSIASTIC supporter of the Bath-a-Day campaign is to be found in Dr. George M. Price, Director of the Joint Board of Sanitary Control of New York City, and author of several books on industrial sanitation. The organization which Dr. Price directs supervises sanitary and fire hazard conditions in the men's and women's apparel factories of New York, and within the past eleven years has achieved notable results in that direction. Dr. Price heartily approved of the movement launched by "Domestic Engineering" to encourage the daily bath habit.

"The advantages of frequent bathing from the standpoint of industrial efficiency have long been recognized by us," he declared, "and our organization is encouraging employers in the clothing trades to provide shower baths and bath tubs for their workers. In cases where this has been done we have noted that the employer benefits quite as much, or even more, than the employes themselves."

Dr. Price's organization has just completed its eleventh annual inspection of New York men's and women's clothing factories, and very satisfactory developments in the application of modern sanitation are reported.

"Our inspection is practically a sanitary and fire hazard census of the entire apparel industry," Dr. Price explained, to a representative of "Domestic Engineering." "We have been doing this work for eleven years now and the results have been satisfactory to all concerned. Our board is the only organization of its kind in the country. It consists of representatives of 80,000 workers and 4,000 employes in the cloak, suit and skirt, and dress and waist industries. Our motto is 'An industry is responsible for the conditions existing in its establishments,' and the board provides for regular inspection of the sanitary conditions in all workshops, and continuous health and sanitation furthered by educational campaigns.

"The provision of adequate and convenient sanitary equipment has a commercial as well as a health value," continued Dr. Price. "I illustrate that point in my book 'The Modern Factory,' where I cite a case of 500 men in a factory who each lose three minutes daily in walking an unnecessary distance to and from the toilet. This amounts to three days yearly for each man. At only $3 daily and assuming 300 working days to the year the annual loss on 500 men is $2,700, which is equal to 5 per cent on $54,000, of which it would only be necessary to spend a small portion on additional or more conveniently placed equipment.

"Further loss is caused by an insufficiency of wash basins. Some codes set the proper proportion as 1 basin to every 15 employes but undoubtedly there are many factories which are below this standard. The point to be noted is that both employers and employes suffer by false economy in this matter.

"Here is another illustration which emphasizes my point. Some years ago the Pullman Company was having continual cases of lead poisoning among its employes. Acting on expert advice, it installed wash rooms and insisted on its employes not only washing their hands but also scrubbing their nails with brushes provided for the purpose. During the first complete year in which these facilities were in operation, there was not a single case of lead poisoning, compared to 77 in the previous year.

"Every factory, and especially those where there is much dust or dirt or uncleanly work should have a full equipment of washing appliances. As I have said, some provide shower and tub baths for their employes, but there is still room for improvement in this respect."

The report recently issued by the Joint Board traverses the eleven years of the organization and gives some interesting comparisons of present-day factory conditions with those formerly existing. Sanitation was a word unknown before the board came into existence, and there was practically no interest in proper ventilation or adequate lighting or fire safety. There were shops without dressing rooms and with inadequate toilet accommodation, places where every one used a common towel, other places that were dirty and unswept and insanitary in a hundred and one ways.

Today there are well lighted and ventilated factories, either separate buildings or floors in spacious loft buildings located in many cases on broad open streets. Yard toilets have been abolished, dressing rooms have been improved beyond recognition, lighting and fire safety equipment and fresh air facilities have all been considered in planning the modern factory.

Nevertheless, as Dr. Price points out, eternal vigilance is the price, not only of liberty, but also of sanitation. There is still a great deal to be done and, if the past and present activities of the Joint Board are any criterion, it is going to be done; all to the benefit of the plumbing and heating fraternity of New York, in the first place, and of other cities as they copy New York's lead in this matter.

Late Contracts Reported.

Messrs. Winter and Carroll, of the Cumberland Heating and Plumbing Co., of Cumberland, Md., report that they have had more work than they could handle since they started in business last May. Their greatest difficulty, they state, has been to get sufficient labor to take care of their contracts.

The Stanton-Barnhart Plumbing and Heating Co., of Johnstown, Pa., is installing the plumbing in the Memorial Hospital in that city at a cost of $18,000. This company has also installed a new 300 h.p. boiler in the Cochran high school building.

R. H. Holtzworth, Huntington, West Virginia, has secured the plumbing contracts on the South Junior high school building to be erected in Huntington, the Kenawha-Cerdo high school, and the high school building to be erected in Holden. The contract on the first school amounts to about $12,000 and the two latter contracts average about $7,000 each.

Exchanging Ideas is the Foundation of Progress

What Associations Are Doing

Through United Effort the Individual Succeeds

St. Louis Master Plumbers' Annual Meeting.

The annual installation of officers of the Association of Master Plumbers of St. Louis, Mo., took place Tuesday, January 10th, at the American Annex Hotel, in that city, the installation being preceded by a banquet at which there was a good attendance of members and invited guests.

Past National President J. Sheehan, Sr., was toastmaster, performing the duty in his usual efficient manner. Mr. Sheehan gave a brief outline of the early history of the association and referred feelingly to the great men connected with the early activities of the organization who passed to the Great Beyond. He also called attention to the fact that four of the officers to be installed were sons of master plumbers who have been very active and loyal members and aided greatly in shaping the course of the association. He then installed J. Sheehan, Jr., as president; D. J. Collins, 1st vice-president; Jos. A. Ries, 2nd vice-president; John J. McCue, treasurer; M. Moynihan, recording and corresponding secretary; D. C. Cunningham, financial secretary; Jos. A. Lynch, sergeant-at-arms. Henry Ryffel, Wm. H. Kuhns, Christ Dunn, F. W. Floeckner as trustees; John B. Els, N. J. Seibel, Jr., and P. C. Ring, auditing committee. Each officer installed responded to the introductory speech made by the toastmaster, pledging himself to work untiringly in the interest of the association and asking the cooperation of every member to make the administration a success.

Retiring President Henry F. Ryffel was presented with a beautiful diamond ring as a slight testimonial of the esteem in which he is held by the members of the organization and as a mark of appreciation for the honorable services rendered as presiding officer for the past two years. The presentation was made by L. McNamara, a past national president.

The entertainment in connection with the banquet was ably arranged by S. A. Kiernan, chairman of the entertainment committee. One of the features introduced by Mr. Kiernan was the printing of a slip containing the choruses of popular songs, especially the one of Mr. Kiernan's own composition entitled "Don't Bite the Hand That's Feeding You," which follows:

If you don't like our Association,
Go back to your home o'er the sea,
Or the town from where you came,
And there you place the blame,
But don't be ungrateful to me.
If you don't like the way we do things,
Come help us and we will help you,
But don't be like the cur in the story,
Don't bite the hand that's feeding you.

The Honorable Max Starkloff, Health Commissioner of the City of St. Louis, responded to the Toast, "Woman." Mr. Starkloff handled the subject in a very able manner and concluded his eulogy by toasting the plumber in no uncertain words,—incidentally stating that the plumber is too modest not to speak up openly, for what he knows is right regarding matters of sanitation in which the health of the country is concerned.

He stated that St. Louis could be the most healthful city in the country if the proper work was done for the elimination of the filthy privy vaults that are still maintained. He requested that the plumbers co-operate with him by reporting unsanitary conditions and assured them that he would do everything within his power to remedy conditions.

C. F. Walther, chief inspector of plumbing, made a short talk in which he requested greater co-operation between his department and the members of the association for the enforcement of the plumbing laws of the city.

Boston Master Plumbers' Annual Meeting.

At one of the largest business meetings in years, the annual election of the Master Plumbers' Association of Boston and Vicinity was held at the United States Hotel, Boston, Mass., Tuesday evening, January 10. The occasion was also the annual dinner of the organization.

President P. W. Donoghue declined re-election, having served through one of the most strenuous years in the history of the organization. In appreciation of his efforts for the association, the organization presented him with a beautiful "grandfather" mahogany clock, the presentation being made by David Craig, former national president, on behalf of the association. Serving on the gift committee with Mr. Craig were James A. Cotter and Edward C. Kelly.

These officers were elected: President, James A. Cotter, of W. G. Connell Co.; vice-president, Joseph C. McCarron; financial secretary, J. Preston Perham, of the Isaac Riley Co., a past president of the Massachusetts association, who was re-elected; treasurer, Patrick A. Lang; clerk, Robert C. Van Amringe, re-elected.

Directors: James A. Cotter, J. C. McCarron, J. Preston Perham, P. A. Lang, Frank B. Connor, Robert A. LaCentra, A. Frank Bonney, James G. Gillespie, M. H. Monks, of Boyden & Co., and Albert E. Robbins.

The appointment of the following committees was announced by President Cotter:

Legislative: Andrew F. Curtin, National director and former Massachusetts president; Frank D. Kirby, James F. Cassedy, former National president and National director; Herbert L. Rose and Thomas J. Murphy.

Auditing committee: John J. Vogel, Orren C. Poole and John W. Zehringer.

Nominating committee: Charles B. Tucker, A. Frank Bonning and Patrick W. Donoghue.

Boston Heating and Piping Contractors' Annual Meeting.

The annual meeting of the Heating and Piping Contractors' Boston Association, Inc., was held January 10 at Young's Hotel, Boston, Mass. The evening was devoted entirely to business, with discussion of business matters. Vice-President Ralph S. Franklin, of the A. B. Franklin Co., was elected president, succeeding J. W. Woodward; Herbert A. Snow, of Buerkel & Co., was elected vice-president; William T. Smallman, of the Isaac Coffin Co., was re-elected treasurer, and C. W. Sisson was re-elected secretary. Directors elected are: M. E. Chase, of Ross, Chase Co.; F. F. Cleghorn, of the Cleghorn Co.; W. T. Cousens, of McLean & Cousens; F. W. Howard, of Ingalls & Kendricken Co.; D. S. Huey, of Huey Bros., and T. A. Ridder, of the T. A. Ridder Co.

Jersey City Master Plumbers Re-elect All Officers.

At the annual election of officers of the Master Plumbers' Association of Jersey City, N. J., held January 5th, 1922, all of the officers were re-elected to their various positions. The members who held office during 1921 and who are to represent the association during the coming year are: Richard Entwistle, president; Valentine Ringle, vice-president; Henry A. Cohendet, secretary; John J. Coppenger, treasurer, and Jacob Fabian, sergeant-at-arms. The trustees who were also re-elected are: William A. Barclay; Charles Werner and Joseph Schneiderman.

Thomas J. Cronin Heads Binghampton, N. Y., Master Plumbers' Association.

The annual meeting of the Binghampton, N. Y., Master Plumbers' Association was held Tuesday, Jan. 10th. Former Alderman Thomas J. Cronin was elected president to fill the vacancy created by the recent death of George Cropper. The other officers are: Vice-president, W. S. C. Smith; secretary, Alex Auchinachie; treasurer, Charles H. Hakes. The delegates from this association to the state convention to be held in Syracuse in March will be: President Cronin; Alex Auchinachie and W. S. C. Smith; alternates, Frank P. Kelly and Charles H. Hakes.

Newark Master Plumbers' Annual Meeting.

At the annual business meeting of the Master Plumbers' Association of Newark, N. J., held on January 12th, the following officers were elected for the year 1922: President, Walter A. Grub; vice-president, Fred Whitelaws; recording secretary, Frank Miller; financial secretary, Michael Bauderman; treasurer, Albert Taaffe; sergeant-at-arms, James Lewis.

Mr. Grub, who moves up from the vice-presidency of the association to the presidency, is widely known and liked among the plumbing fraternity throughout New Jersey. He has for several years been secretary of the New Jersey State Association of Master Plumbers in addition to holding office in the Newark organization, and it may be worth while to point out for the benefit of those who argue that they have not the time to attend to any association work, that he has managed to build up one of the most successful plumbing businesses in the state. Starting in business for himself about twelve years ago Mr. Grub has rounded one after another of those corners which test the mettle of all beginners, and is now firmly established. His personality has won him as great popularity in the community in which he does business as in the state and local organizations. Walter Grub takes the plumbing business very seriously and it can safely be said that there is no man in the State of New Jersey who has higher ideals concerning the industry. He believes that the master plumber is a business man rather than a mechanic, and this viewpoint is strikingly reflected in the premises in which he does his work. Whereas the "office" of a good many master plumbers is a very untidy place, with pipe and tools and equipment lying all about the floor and even littering up the desk, Mr. Grub's well furnished and well ordered office might easily be mistaken for the office of a bank president rather than that of a master plumber. There is not so much as an inch of pipe or a single tool in sight. Just a double desk with Mr. Grub at one side, and a stenographer at the other; a filing cabinet, a spare table, and some chairs for visitors.

"I like to have a well kept office," Mr. Grub explained recently to a representative of "Domestic Engineering." "I think it's an asset in this or any other business. It impresses prospective customers just in the same way people are impressed by the fine premises in which the banks house themselves. I adopt that argument, on a smaller scale, of course."

Walter Grub assumes the presidency of the Newark Association at a time when that organization has broken all records both as to membership and constructive achievements. As an evidence of the growth of the association it is worthy of mention that at the last meeting the members decided that the time had come to establish regular headquarters, with a salaried clerk to look after all office matters, records, etc. It was voted to make an appropriation for this purpose, and suitable premises are to be sought right away, and a capable man engaged for the work. Thus President Walter Grub will begin his administration with the same efficiency in his organization activities as is to be found in his own business.

The annual dinner of the association is to take place at the Achtel-Stetters Banquet Hall, 842 Broad Street, Newark, February 21. An entertainment committee has been appointed to make the necessary arrangements and these will be announced in due course.

Rockford Master Plumbers Discuss Part Payment Plan.

Members of the Master Plumbers' Association, of Rockford, Ill., held a most interesting meeting at association headquarters in that city on Monday evening, January 9th, at which President E. O. Bergren presided.

Among other things considered during the evening, the part payment plan for plumbing installation came up for a lively discussion. President Bergren, Treasurer Bailey and Thomas Hodges all spoke at some length on the various phases of the subject.

In general, the plan was decided a good thing for the industry, but several objections were raised to it on the grounds that it would be difficult if not impossible, for the plumber to protect himself entirely against the possibility of default in payments. Mr. Bailey contended that the lien laws of this state are insufficient protection for the plumber. The association intends to give the plan further consideration in the near future.

Following the discussion, Secretary J. W. Nelson read several communications. The remainder of the evening was given over to views on the labor situation and association activities along these lines. The meeting adjourned about midnight.

Massachusetts Master Plumbers' Association Places Directors in Charge of Districts.

Following out the plan adopted by the Massachusetts Master Plumbers' Association at its mid-summer meeting for dividing the state into districts, each district to be in personal charge of a director of the organization, the directors, at the first meeting of the new year, have mapped out their work whereby nine of the 13 directors are placed in charge of districts.

The state is divided into ten districts, but as no director lived in one of the districts, directors of two adjoining districts will look after the welfare of that district until the next annual election, when it is probable that a director from that section of the state will be elected. Of the four directors not placed in charge of districts, one is the president, who by virtue of his office, will co-ordinate the work of the district directors and the other three reside within districts from which another also serves.

District 1 takes in the central part of the state or Worcester county and the veteran member who is a former president of the state association, Daniel S. Loan, of Worcester, has been placed in charge. The entire county is within easy traveling communication of Worcester.

District 2 is composed of Franklin county with Greenfield easily accessible from all parts of the county. Charles F. Peck, of Greenfield, is the director in charge. District 3 includes Hampden county with Springfield as the central point, and William J. Hyland, of the William J. Hyland Manufacturing Co., of that city is director in charge. Hampshire county communities are divided between districts 2 and 3. District 4, or Berkshire county, will have headquarters at Pittsfield, and William Milne will be director in charge.

District 5 includes the northern part of Middlesex and Essex counties, and former State President Daniel F. Carroll, of Carroll Bros., Lowell, is director from that district. District 6 takes in parts of both counties with George E. Ryan, of Lynn, as the director in charge. District 7 takes in Boston and its suburbs, which include places in Suffolk, Middlesex and Norfolk counties. President P. W. Donoghue, of the Boston Association, who will retire from its presidency at its meeting this month, is the director who will be in charge.

District 8 will contain parts of Plymouth, Bristol and Norfolk counties, and Thomas M. Farrell, of Brockton, of Hobert & Farrell, is the director selected to look after the district. District 9 takes in parts of Bristol and Plymouth counties, and Andrew McGlynn, of McGlynn & Co., of Taunton, is the director in charge there. District 10 includes the whole of Barnstable and the southern part of Plymouth counties, and because no director is located in that district, Messrs. McGlynn, of Taunton, and Farrell, of Brockton, will be in charge until the annual meeting in April. There are many prominent members of the association located in District 10, which takes in the whole of Cape Cod, the historic town of Plymouth and a section which is one of the most popular summer resorts in the country. Districting of the state is thus certain to assure that section of Massachusetts a voice on the board of directors of the state association.

The district lines, as laid out above, are not hard and fast lines, for where one or two communities geographically situated in one county are on a direct railroad line or within a short motor ride of the headquarters of a neighboring county, then these communities will come within the jurisdiction of the director most accessible to them.

The directors have a meeting scheduled for January 19, at which definite plans for the carrying on of the zone work will be made and immediately thereafter meetings will be arranged and active interest started among the master plumbers of each district. It is believed that when the annual meeting takes place, there will be some definite work of accomplishment to report from each director in charge.

Detroit Sanitary and Heating Contractors to Hold Masquerade.

Members of the Detroit Association of Sanitary and Heating Contractors will cast aside the dignity of bearing and seriousness of mien incidental to the business of keeping the city warm and clean and will all join hands in a big Masquerade Dance in Harmonie Hall, Detroit, Mich., on Tuesday evening, February 14th.

William Hughes, chairman of the entertainment committee, expects a large turnout. Manufacturers' and jobbers' representatives are invited, but whether or not they will be expected to disguise themselves as contractors, we have not been informed. At any rate, as Mr. Hughes expresses it, "there are sure some terpsichorean artists among them."—an item that should prove of interest to the ladies who are planning to attend.

The Ladies' Auxiliary of the West Side Club will hold a dance party in the club rooms on Trumbull Avenue, Detroit, on January 24th. This will be the fourth dance of the season.

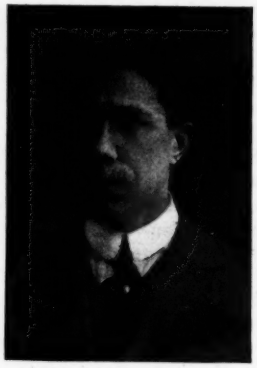
Between social events the Detroit contractors are managing to worry along with some nice profitable plumbing and heating contracts.

Maryland Association of Master Plumbers to Entertain.

The Maryland Association of Master Plumbers will give a reception and dance in Lehmann's Hall, Baltimore, Md., on Monday, February 27th. The affair promises to be a great success as tickets have been distributed to members and their friends throughout the entire state, and many have already signified their intention to attend.

The Installation of Bronx Master Plumbers' New Officers.

"The installation of officers recently elected by our association was very successful," said Charles W. Kirchoff, retiring president of the Bronx Association of Master Plumbers, New York City. "We had our regular meeting and then inducted the new officers, and the rest of the evening we devoted to the more serious matter of amusing ourselves. The evening, in fact, was such a success as a get-together affair that a proposal was made to have a social evening every three months or so. The question is to be brought up at the next business meeting and will probably be carried.



Chas. W. Kirchoff.

"It seems to me," added Mr. Kirchoff, "that the more we get together in this way the better for all of us, and the same applies, I think, to every master plumbers' association in the country. We are all in the same line of business and our interests are the same; and when we get together and start comparing notes the smartest of us can learn something. I'm all for the get-together meetings, and the more the better."

PROGRAM FOR THE TWENTY-EIGHTH ANNUAL MEETING OF THE A. S. H. & V. E.

To be Held at the Hotel Pennsylvania, New York City, January 24-26, 1922.

The official program for the twenty-eighth annual meeting of the American Society of Heating and Ventilating Engineers, to be held at the Pennsylvania Hotel in New York City on Tuesday, Wednesday and Thursday, January 24, 25 and 26, has just been issued and follows herewith:

First Session,
Tuesday, January 24, 2 p. m.

Business Session:

Announcement of Quorum.
Appointment of Tellers of Annual Election.
Address of President.
Report of Council.
Report of Secretary.
Report of Treasurer.
Reports of Committees:—
- Committee on Chapters.
- Committee on Legislation.
- Committee on Code of Ethics.
- Committee on Memorial to J. R. Allen.
- Committee on Revision of the Constitution.
- Committee on Code for Testing Low-Pressure Steam Heating Boilers.
- Committee on Furnace Heating.
- Committee on Steam and Return Main Sizes.

Unfinished Business.
Report of Tellers of Annual Election.
New Business.

Second Session.
Tuesday, January 24, 7:30 p. m.

General Session:

Paper:—Heating, Ventilation and Mechanical Equipment of the Hotel Pennsylvania in New York City, by Arthur K. Ohmes.
Paper:—Improvements in the Process for Cleaning and Drying Air Mechanically, by Wm. K. Baldwin.

Topical Discussion:—Effect of Wind on Heating of Buildings (at request of Standardization Committee of Heating and Piping Contractors' National Association).

Third Session.

Wednesday, January 25, 10 a. m.

Ventilating Session:

Paper:—Standardized Method of Measuring Fan Delivery, by E. N. Fales.

Paper:—The Importance of Pure Water Supply in Humidifying Systems, by Fred E. Bahnson and Leona Maloney.

Paper:—Ozone in the St. Louis Schools, by E. S. Hallett.

Paper:—Hospital Ship Ventilation, by R. C. Holcomb.

Fourth Session.

Wednesday, January 25, 2 p. m.

Research Session:

Report of Committee on Research.

Paper:—Current Research in Heating and Ventilating, by D. Paul Anderson.

Paper:—A Study in Heat Transmission with Special Reference to Building Materials, by F. C. Houghton.

Paper:—Temperature Humidity and Air Motion Effects in Ventilation, by O. C. Armspach and Margaret Ingels.

Paper:—Oxides of Nitrogen Produced by Ozone Apparatus, by G. W. Jones, W. P. Yant and O. W. Armspach.

Fifth Session.

Thursday, January 26, 10 a. m.

Industrial Session:

Paper:—The Control of Blower Motors, by Henry H. Issertel.

Paper:—Dehydration and Freshening of Codfish, by Henry E. Banks, 3d.

Paper:—The Under-Feed Stoker, by Frank A. DeBoos.

Sixth Session.

Thursday, January 26, 2 p. m.

Heating Session:

Paper:—Heating the Average Home Economically, by P. J. Dougherty.

Paper:—Heat Transfer for Conduction and Convection, by W. K. Lewis, W. H. McAdams and T. H. Frost.

Paper:—Tests of Humidity Conditions in a Residence Heated by a Warm-Air Furnace Using Recirculated Air, by A. P. Kratz.

WISCONSIN MASTER PLUMBERS ELECT OFFICERS.

The twenty-eighth annual convention of the Wisconsin Master Plumbers' Association was held at Milwaukee, Wis., on Tuesday and Wednesday, January 17 and 18. There was a large attendance and a great deal of good was accomplished.

The following officers were elected for the ensuing year: President, Joseph Brah, Milwaukee; vice-president, J. J. Neumann, Beaver Dam; treasurer, E. Henoch, Milwaukee; secretary, Charles Pelunek, Milwaukee. These master plumbers, together with J. B. Sullivan, of Stevens Point, also constitute the board of directors.

A complete report of the convention will appear in next week's issue of "Domestic Engineering."

F. A. Long Bridgeport, Conn., Plumbing Inspector.

Frank A. Long, plumbing contractor, 77 Alice Street, Bridgeport, has been appointed plumbing inspector of the city of Bridgeport, to fill the unexpired term of Andrew Owens, who died recently. The present appointment expires April 1st this year, but it is expected Mr. Long will be reappointed at that time.

January 24, 25 and 26, 1922.—The twenty-eighth annual meeting of the American Society of Heating and Ventilating Engineers, to be held in the Pennsylvania Hotel, New York City.

January 24, 25 and 26, 1922.—The annual convention of the Illinois Master Plumbers' Association, at Champaign, Ill. The sessions will be held at the Masonic Temple.

February 7, 8 and 9, 1922.—The 27th annual convention of the Minnesota Retail Plumbers' Association, at Duluth, Minn., with headquarters at the Spalding Hotel.

February 14, 15 and 16, 1922.—The annual convention of the Ohio State Association of Master Plumbers, at Canton, Ohio.

February 15, 1922.—The winter meeting of the Central Supply Association, at Hotel Stratford, Chicago.

February 20, 21 and 22, 1922.—The annual convention of Nebraska Retail Plumbers' Association, at Omaha, Neb.

March 7, 8 and 9, 1922.—The annual convention of the State Association of Master Plumbers in North Dakota, at Grand Forks.

March 13, 14 and 15, 1922.—The annual convention of the Indiana Society of Sanitary Engineers to be held at Indianapolis.

March 27 and 28, 1922.—The annual convention of the Kansas Master Plumbers' Association, at Salina, Kansas.

April 10, 11 and 12, 1922.—The annual convention of the Oklahoma State Association of Master Plumbers, at Shawnee, Okla.

April 17 and 18, 1922.—The annual convention of the Tennessee State Association of Sanitary Engineers, at Memphis, Tenn.

April 18, 19 and 20, 1922.—The next annual convention of Iowa Master Plumbers' Association, in Mason City, Iowa.

May 2 and 3, 1922.—The annual convention of Colorado Society of Sanitary and Heating Engineers. It has not yet been decided where the convention will be held.

May 8 and 9, 1922.—The twelfth annual convention of the North Carolina Association of Master Plumbers, at Asheville, N. C.

May 12 and 13, 1922.—The annual convention of the Association of Master Plumbers of the State of Washington, at Tacoma, Wash.

May 15, 16 and 17, 1922.—The annual convention of the Kentucky State Association of Master Plumbers in Ashland, Ky.

May 22, 23 and 24, 1922.—The annual convention of the State Association of Master Plumbers of California, at Sacramento, Calif.

June 6, 7 and 8, 1922.—The fortieth annual convention of the National Association of Master Plumbers, in Detroit.

February 20, 1922.—Concert and Reception of the Master Plumbers' Association of Greater New York, to be held at the Hotel Pennsylvania in New York City.

February 15, 1922.—Winter meeting of the Central Supply Association, Hotel Stratford, Chicago, Ill.

February 14, 1922.—Masquerade Ball, Detroit Association of Sanitary and Heating Contractors, Harmonic Hall, Detroit, Michigan.

AMONG THE WHOLESALERS AND MANUFACTURERS

CENTRAL SUPPLY ASSOCIATION TO MEET AT HOTEL STRATFORD.

The winter meeting of the Central Supply Association will be held at the Hotel Stratford, Chicago, instead of the Hotel Sherman, as was previously announced. It was decided that better accommodations could be obtained for the meeting at the latter hotel. Preceding the general meeting, scheduled for Wednesday the 15th, there will be a meeting of the Executive Committee on Tuesday the 14th.

BOARD OF DIRECTORS OF THE NATIONAL TRADE EXTENSION BUREAU HOLDS ANNUAL MEETING.

The Board of Directors of the National Trade Extension Bureau held its annual meeting at Evansville, Ind., on Monday and Tuesday, January 16th and 17th. Plans for the new year were discussed thoroughly and formulated, following which the officers for the ensuing year were elected as follows: President, Jos. W. Cannon, Chicago; vice-president, A. M. Maddock, Jr., Trenton, N. J.; treasurer, L. C. Huesmann, Indianapolis, Ind.; secretary-manager, W. J. Woolley, Evansville, Ind.

A complete report of the meeting will be published in next week's issue of "Domestic Engineering."

VIRGINIA-CAROLINA SUPPLY CO. TO OPEN BRANCH IN LYNCHBURG, VA.

The Virginia-Carolina Supply Co., of Richmond, Va., will open a branch of its supply business in Lynchburg, Va., in the early spring. The company some time ago purchased a piece of property at Eighth and Church Streets, in Lynchburg, a very desirable location in the center of the city, but has been delayed in erecting its new building by the fact that present tenants would not vacate the property. Arrangements are now being made, however, to have part of the property cleared for building in the near future. A. J. Desmond will be manager and B. F. Rogers assistant manager of the new branch.

COCHRAN-SARGENT CO.'S SALESMEN IN ANNUAL CONVENTION.

The officers and sales representatives of the Cochran-Sargent Co., of St. Paul, Minn., held their annual sales convention in that city on January 9th to 14th, inclusive. The first session was held at 9 o'clock on Monday morning, and was opened with an address by M. M. Cochran, president of the company. During the week representatives of various manufacturers addressed the convention, which was attended by the company's entire sales force, including representatives and managers from its branches in Fargo, N. D., and Sioux Falls, S. D. The convention came to a close on Saturday evening with a banquet at the St. Paul Athletic Club. This was attended by the company's entire organization, and it was followed by speeches and general discussion.

THE PFAU MFG. CO. BUYS FLORENTINE POTTERY CO.

The Pfau Mfg. Co., of Cincinnati, Ohio, has just purchased the business and plant of the Florentine Pottery Co., at Cambridge, O.

NEW SALES AGENTS APPOINTED.

The Vulcan Brass Manufacturing Co., of Cleveland, O., announces that it has appointed Phillips & Murphy, 1208 Merchants Bank Building, Indianapolis, Ind., as agents for its products in Indiana, Kentucky, Illinois and Western Ohio.

WESTERN TRADE GOLF ASSOCIATION HOLDS ANNUAL ELECTION.

The Western Trade Golf Association held its annual winter meeting and election of officers on January 7th at the Stratford Hotel, Chicago. The business meeting, at which about thirty members were present, was preceded by a dinner. The results of the election were as follows: A. S. Lindeblad, president; William Byrd, vice-president; Peter Munn, secretary; E. W. Sanborn, handicapper; William Devine, treasurer; C. R. Elliott, captain; R. C. Flinder and H. M. Booth, directors.

BUILDING PERMITS FOR DECEMBER.

Permits to the Number of 31,544 Are Issued During Month as Against 21,483 in the Corresponding Month of 1920.

During December, 31,544 permits were issued with an estimated valuation of $141,235,220, as against 21,483 in number, and $76,493,534 in estimated valuation for the corresponding month in 1920, according to official reports received by "The American Contractor," from 192 cities. This is well nigh 100 per cent over December, 1920.

The figures in detail follow herewith:

	Dec., 1921.		Dec., 1920.	
	No. of Bldgs.	Estim. cost.	No. of Bldgs.	Estim. cost.
Alabama—				
Birmingham	300	$360,973	211	$147,737
Arkansas—				
Little Rock	124	449,737	115	66,648
Arizona—				
Phoenix	54	77,930	114	126,852
California—				
Alameda	37	75,687	24	76,075
Berkley	130	294,955	76	102,099
Fresno	203	500,539	200	2,234,944
Long Beach	270	1,392,700	219	442,170
Los Angeles	3,364	9,168,851	1,913	3,803,838
Oakland	500	2,149,756	324	639,779
Pasadena	209	393,278	175	238,899
Sacramento	224	420,266	106	231,200
San Diego	265	1,775,711	244	1,220,463
San Francisco	568	2,007,705	376	1,749,330
San Jose	59	121,370	48	57,884
Stockton	67	163,033	42	73,368

	Dec., 1921. No. of Bldgs.	Dec., 1921. Estim. cost.	Dec., 1920. No. of Bldgs.	Dec., 1920. Estim. cost.
Colorado—				
Colorado Springs	48	44,445	27	23,418
Denver	243	713,200	134	680,900
Pueblo	33	34,540	36	29,832
Connecticut—				
Bridgeport	52	101,675	73	539,247
New Britain	49	57,416	54	61,277
New Haven	92	373,410	62	228,760
Delaware—				
Wilmington	48	75,324	52	59,052
District of Columbia—				
Washington	552	2,382,617	340	299,148
Florida—				
Miami	204	657,700	253	399,800
Pensacola	54	60,212	52	30,113
Tampa	237	182,553	86	128,300
Georgia—				
Atlanta	236	570,556	120	299,896
Augusta	162	83,134	137	116,470
Macon	64	38,529	62	69,315
Savannah	56	87,225	30	56,500
Idaho—				
Boise	43	20,389	40	22,075
Illinois—				
Aurora	39	43,430	11	29,250
Chicago	543	9,589,750	171	5,308,000
Decatur	45	113,250	21	42,625
East St. Louis	33	53,430	27	20,704
Evanston	45	467,880	13	40,100
Peoria	68	218,000	24	42,331
Quincy	3	19,500	1	800
Rockford	44	102,370	53	82,540
Springfield	146	181,920	53	49,420
Indiana—				
Fort Wayne	78	279,370	38	95,169
Gary	26	90,704	38	121,740
Hammond	25	69,850	19	99,200
Indianapolis	488	1,863,104	350	414,651
Richmond	31	32,025	8	137,200
South Bend	85	97,938	55	50,333
Terre Haute	35	87,742	19	20,790
Iowa—				
Cedar Rapids	37	62,189	27	59,210
Davenport	39	55,935	29	32,845
Des Moines	85	197,780	33	156,275
Dubuque	13	23,900	26	31,746
Mason City	28	13,345	34	3,760
Sioux City	65	691,025	31	66,370
Kansas—				
Kansas City	41	74,250	18	38,650
Leavenworth	8	10,600	4	32,000
Topeka	48	71,595	22	134,910
Wichita	163	324,504	45	95,400
Kentucky—				
Covington	22	16,300	17	29,250
Lexington	58	108,695	21	18,567
Louisville	165	569,200	99	201,950
Louisiana—				
New Orleans	165	664,700	64	1,210,437
Maine—				
Portland	38	68,275	23	23,560
Maryland—				
Baltimore	866	1,033,110	845	1,291,450
Cumberland	13	17,852	18	18,980
Massachusetts—				
Beverly	13	15,975	11	9,950
Boston	423	2,495,557	377	683,024
Brockton	38	112,815	35	41,000
Cambridge	60	192,135	38	104,875
Chelsea	21	27,050	19	13,415
Chicopee	10	14,250	4	4,300
Fall River	42	397,440	18	110,250
Fitchburg	25	23,775	14	45,525
Haverhill	6	25,000	2	2,100
Holyoke	13	30,985	13	39,300
Lawrence	34	183,050	19	146,300
Lowell	35	67,360	52	103,265
Lynn	25	196,017	9	1,510
Medford	32	109,335	16	54,375
New Bedford	48	243,143	19	148,123
North Adams	3	850	5	16,400
Quincy	62	137,895	29	48,540
Salem	30	30,671	42	58,420
Somerville	24	275,890	16	18,975
Springfield	95	310,235	36	121,650
Waltham	15	37,225	14	10,395
Worcester	81	308,845	89	187,895
Michigan—				
Battle Creek	21	24,470	18	13,825
Bay City	45	17,803	21	30,100
Detroit	865	3,386,642	726	2,967,795
Flint	90	289,580	84	105,830
Grand Rapids	151	335,891	79	185,615
Jackson	25	46,785	20	30,940
Kalamazoo	56	215,916	25	41,848
Lansing	81	139,965	50	112,095
Pontiac	34	15,057	33	48,880
Saginaw	54	25,846	51	34,410
Minnesota—				
Duluth	87	208,405	46	563,030
Minneapolis	373	2,855,005	280	607,825
St. Paul	188	995,218	138	341,224
Missouri—				
Kansas City	281	926,900	175	630,150
Springfield	32	47,125	19	335,400
St. Joseph	59	46,945	26	17,390
St. Louis	546	979,720	489	524,485
Montana—				
Butte	4	3,275	8	6,150
Nebraska—				
Lincoln	48	505,230	11	12,325
Omaha	85	3,633,276	40	186,015
New Hampshire—				
Manchester	33	73,740	17	15,865
New Jersey—				
Atlantic City	296	524,751	139	8,492,789
Bayonne	20	155,048	15	84,850
Camden	78	50,400	35	89,723
East Orange	57	190,792	53	315,845
Elizabeth	57	218,136	40	178,562
Hoboken	13	142,750	16	73,580
Orange	40	223,880	23	23,135
Passaic	33	464,300	22	122,500
Paterson	109	350,043	68	60,707
Plainfield	26	126,616	14	176,795
Trenton	45	184,375	39	49,515
West Hoboken	13	25,525	25	56,405
New Mexico—				
Albuquerque	29	326,478	30	38,100
New York—				
Albany	113	328,005	105	101,936
Auburn	4	10,650	8	6,550
Binghamton	188	197,186	39	31,531
Buffalo	354	5,164,000	239	533,000
Mt. Vernon	41	520,980	19	155,700
New York City (Boros):				
Manhattan	371	9,704,828	519	4,740,277
Queens	1,665	7,673,936	330	2,971,563
Richmond	366	1,266,865	140	316,942
Brooklyn	1,272	11,804,629	806	3,280,137
Bronx	750	9,733,886	247	1,130,880
Niagara Falls	25	380,280	35	117,335
Rochester	235	1,823,180	154	481,781
Syracuse	123	494,757	77	164,170
Troy	27	440,495	7	17,540
Utica	35	131,150	31	45,035
Yonkers	43	244,500	41	483,200
North Carolina—				
Charlotte	33	305,450	11	73,080
Wilmington	14	15,550	15	32,850
North Dakota—				
Fargo	9	83,735	9	34,615
Grand Forks	...	none	...	none
Ohio—				
Akron	112	238,655	83	120,925
Canton	78	128,207	61	136,270
Cincinnati	1,161	3,041,535	933	340,285
Cleveland	581	2,305,525	513	6,088,625
Columbus	208	394,665	129	554,910
Dayton	96	411,526	111	361,475
Hamilton	13	8,050	65	237,216
Sandusky	15	28,110	16	30,005
Springfield	35	20,865	21	55,640
Toledo	162	1,050,081	107	115,125
Youngstown	73	159,555	63	129,635
Oklahoma—				
Muskogee	33	66,785	10	58,659
Oklahoma City	153	379,341	76	219,441
Okmulgee	23	58,450	25	98,100
Tulsa	83	552,300	93	290,341

	Dec., 1921. No. of Bldgs.	Estim. cost.	Dec., 1920. No. of Bldgs.	Estim. cost.
Oregon—				
Portland	731	854,055	594	632,605
Pennsylvania—				
Allentown	23	31,650	17	40,700
Altoona	32	9,245	54	34,513
Bethlehem	14	37,950	5	1,250
Easton	13	97,325	10	36,135
Erie	80	221,030	41	78,350
Harrisburg	23	170,307	12	40,600
Johnstown	23	296,000	25	240,000
Lancaster	16	49,350	18	50,475
Philadelphia	882	3,070,455	666	1,443,713
Pittsburgh	338	2,590,855	188	797,054
Reading	14	9,575	14	13,600
Wilkes-Barre	34	48,348	49	50,001
York	12	7,000	9	21,855
Rhode Island—				
Central Falls	4	26,275	4	1,700
South Carolina—				
Charleston	33	54,075	22	26,640
South Dakota—				
Sioux Falls	10	46,050	8	25,211
Tennessee—				
Chattanooga	148	233,835	118	33,990
Knoxville	84	173,332	39	24,913
Memphis	279	1,245,120	106	122.387
Nashville	199	149,055	149	64,103
Texas—				
Austin	31	94,100	8	17,350
Dallas	228	597,465	181	1,434,331
El Paso	87	96,449	66	98,646
Fort Worth	119	163,968	114	215,105
Galveston	345	178,368	342	24,816
Houston	406	1,103,226	265	228,391
Utah—				
Ogden	20	93,800	21	46,950
Salt Lake City	117	404,595	45	316.250
Virginia—				
Norfolk	60	128,848	42	94,829
Portsmouth	24	128,595	10	9,520
Richmond	163	969,225	94	354,038
Washington—				
Everett	80	29,410	101	26,828
Seattle	518	494,835	577	1,676,765
Spokane	115	88,225	69	116,550
Tacoma	201	542,297	193	142,110
West Virginia—				
Huntington	77	137,335	52	59,770
Wheeling	29	123,015	16	31,735
Wisconsin—				
Kenosha	37	24,387	63	112,180
Madison	23	98,100	15	531,275
Milwaukee	194	1,785,905	128	719,579
Total	31,544	$141,215,220	21,483	$76,493,534

PERSONAL MENTION.

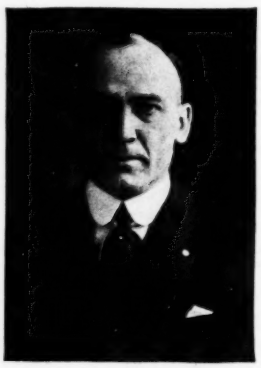
H. A. Stamper, assistant to the president of the Vaile-Kimes Co., Dayton, O., has resigned his position with that company to take up new duties as manager of sales for the Monarch Engineering Co., also of Dayton, O. Mr. Stamper is a well known figure in the water system industry, having been connected with the Vaile-Kimes Co. in various capacities for nearly sixteen years. During this time he has assisted in every phase of the business, including production, service and sales.

H. A. Stamper.

M. A. Rooney has recently been appointed vice-president and manager of sales for Hart & Crouse Co., of Utica, N. Y. Mr. Rooney was formerly manager of the Detroit branch of the American Radiator Co.

E. A. McGinnis, of the Chicago branch of the Standard Sanitary Manufacturing Co., Pittsburgh, Pa., has just returned from Minneapolis where he attended a general sales meeting of the Central Supply Company.

E. W. Sanborn and **A. S. Lindeblad** left this week for Detroit where they will attend a sales conference of the Detroit Range Boiler & Steel Barrel Company. From Detroit they will go to New York, Philadelphia and Mannington, W. Va., visiting the various manufacturers whose products they handle.



E. H. Lewis.

E. H. Lewis, whose likeness is shown herewith, has recently joined the sales force of the Chicago Pottery Co., of Chicago, and is out in his old territory calling on his friends to present his new line. Mr. Lewis was formerly connected with the Kansas City, Mo., offices of the Standard Sanitary Manufacturing Co., of Pittsburgh, Pa.

Tom Parker, of the Detroit Range Boiler & Steel Barrel Co., Detroit, Mich., has been traveling through the Northwest visiting jobbers and exhibiting moving pictures of the manufacture of this company's products. His pictures have been received with interest wherever he has displayed them.

TRADE LITERATURE

The Fulton Company Issues New Booklets.

The Fulton Company, Knoxville, Tenn., has recently issued several new folders and booklets descriptive of its products. A folder, in colors, describes the Ja-Nar radiator covers; another folder contains description "Sylphon" temperature regulators for air, liquids and gases, and a twelve-page booklet on "Motor Efficiency" explains the Sylphon temperature regulator as applied to internal combustion motors.

New "Wiseco" Booklet.

J. B. Wise, Inc., Watertown, N. Y., has issued a folder descriptive of the "Wiseco" all wrot trap with removable body for cleanout.

Booklet on Plumbers' Brass Goods.

The Vulcan Brass Mfg. Co., Cleveland, Ohio, has issued a booklet containing information about its self-closing basin cocks, bibbs and stops. It is illustrated with several cuts, one a cross section showing a detailed view of the special "Samson lock adjustment."

EverHot Heater Company to Publish Monthly Bulletin.

The first issue of "Sanitary Times," a monthly news bulletin, has just been issued by the EverHot Heater Co., Detroit, Mich. George Wilcox is the editor. The bulletin is in four- page, five-column form and contains items of general interest to the trade, made especially interesting by the use of cuts and cartoons.

United Brass Mfg. Co.'s Folder Announces Standardization of Faucets.

The United Brass Manufacturing Co., of Cleveland, O., has just issued a folder announcing some noteworthy changes in its line of brass goods. Aiming at a more complete standardization of its goods they have among other items made four faucet stems cover one entire line which at one time took over thirty different patterns.

Twenty Years Ago in "Domestic Engineering"

Saturday, January 11, 1902.

Large Reduction in Seamless Tubing.—Manufacturers of brass pipe have made a sweeping reduction in the prices of seamless tube, iron pipe sizes. The following are the present prices: ⅜ inch, 20 cents per pound; ½ inch, 19 cents per pound; ¾ inch to 3 inches, 18 cents per pound. The reduction amounts to three cents per pound on the three-quarter to three inch, eight cents per pound on the one-half inch, and nine cents per pound on the three-eighths inch.

Damaged by Fire.—The plant of the Berger Bros. Co., Philadelphia, was damaged by fire on the morning of January 4. No men were thrown out of work, and the plant will be running as usual within a few days.

Capacity Increased.—The A. Wyckoff & Son Co., Elmira, N. Y., are enjoying so much prosperity that they have again increased the capacity of their steam pipe covering mill.

Denver Strike Settled.—The plumbers' strike, which has been on since the first of last September, was settled January 2, when the members of the union returned to their old jobs at a wage of $4.25 per day. This is an advance of 25 cents, but is 25 cents less than the advance originally demanded. The terms of agreement include the abandonment of the co-operative shop, which had been in operation for the past three weeks. Only one helper will be allowed to each shop.

Busy Days.—This is the busiest end-of-the-season period ever known in the plumbing trade in Minneapolis.

Dead.—William H. Kavanaugh died at his home in Utica, N. Y., on January 5. Mr. Kavanaugh had been in business for many years, and at one time had one of the largest plumbing establishments in the state.

Elected Alderman.—Joseph A. Maynard, of the F. W. Webb Manufacturing Co., Boston, has been elected to the city council of that city.

Journeymen Organize.—The plumbers of Danbury, Conn., have organized a local branch of the Journeyman Plumbers', Gas Fitters', Steam Fitters' and Steam Fitters' Helpers' Union.

Death of a Great Metallurgist.—Stephen Puppli, one of the most scientific brass manufacturers in the United States, died at Bellevue, Pa., January 5.

Beaumont Strike Settled.—The plumbers' strike at Beaumont, Texas, which lasted four weeks, has been settled by the men returning to work at the old scale—$4 per day of eight hours.

Plumbers are Licensed.—Plumbing licenses were issued for the first time last week at Los Angeles, Calif. Those who employ three journeymen or less must pay a license of $20 a year; more than three journeymen, $30 a year.

Nation's Capital to be More Sanitary.—The entire sanitary condition of Washington is to be improved. Many old buildings will be torn down, and in others the plumbing will be brought up-to-date.

Building in New England.—The estimated cost of new building enterprises projected throughout New England last week amounted to $2,422,000, as against $1,866,000 during the corresponding week last year.

One of the Oldest.—Martin Healy & Son have been established since 1865, and are one of the oldest plumbing and heating firms in Brooklyn, N. Y.

Changes Name.—The Sanitary Supply Co., of Grand Rapids, Mich., has changed its name to the Ferguson-Marcellus Company.

Saturday, January 18, 1902.

Incorporated.—The Wm. B. Scaife & Sons Co., Pittsburgh, has been incorporated with a capital stock of $850,000. The business was founded in 1802—one hundred years ago—and they are now going to enlarge their plant.

Sewer Contract Signed.—A contract for the sewer and paving of Havana, Cuba, has been given to McGivney & Rokeby, of Jersey City, N. J.

Will Double Capital Stock.—The directors of the Youngstown Iron, Sheet & Tube Co., of Youngstown, Ohio, have voted to increase their capital from $2,000,000 to $4,000,000.

To Enlarge Again.—Stanley G. Flagg & Co., of Philadelphia, have bought a large tract of ground adjoining their present foundry at Pottstown, Pa., and will erect additional buildings.

Incorporate With Large Capital.—The J. H. Ashdown Hardware Co., leading jobbers of plumbing supplies in Winnipeg, Canada, has been incorporated with a capital of $100,000.

Change in Plumbing Firm.—F. F. Bentley, of Niles, Ohio, has sold to Henry Ehlaner and G. C. Davis his entire plumbing and heating business. The new concern will be known as the Niles Plumbing and Heating Co.

Want Inspection.—The plumbers of Marion, Ind., are agitating the appointment of an inspector of plumbing and gas fitting.

Strike Settled.—The plumbers' strike at Wichita, Kansas, resulted in the hours being reduced from nine to eight, but the old scale of three dollars per day has not been changed.

"His Highness."—The biggest whistle ever seen is being exhibited in the New York store window of the Crosby Steam Gauge and Valve Company. The giant whistle is several feet in height and several feet in diameter. It has been named "His Highness."

An Important Discovery in Lighting.—Last week at the Engineers' Club, in New York, Peter Cooper Hewitt exhibited for the first time his new electric vapor light. He employs a long glass tube, charged with mercury gas. Through this an electrical current is passed. This produces a steady, constant violet light, which shades off to a blue green. (Editor's Note, 1922: It was the invention of this light which made possible the great and rapid development of the motion picture industry, as it enabled the motion camera to take pictures of interior scenes.)

To Take a Rest.—James M. Young, president of the Fort Pitt Supply Co., of Pittsburgh, is enjoying a trip through Mexico.

A Big Year.—The Butte Plumbing Company, at Butte, Montana, has just closed its most successful year. It has done a business of a little over $60,000.

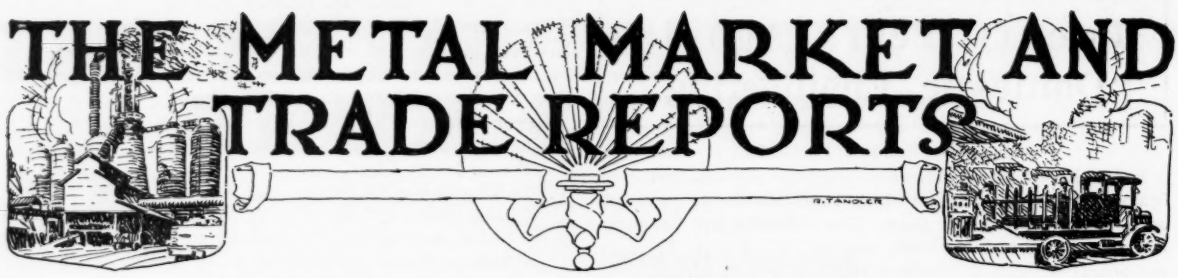
Death.—Major Joseph H. Chadwick is dead at his home in Boston. He was vice-president of the Chadwick-Boston Lead Co., and had been a prominent figure in manufacturing circles for half a century.

More than $390,000,000 was expended by the War Finance Corporation between January 4, 1921, when it resumed operations, and December 31 last, according to a report issued by Eugene Meyer, Jr., managing director.

In constructing the new Standard Oil Building in New York City, considerable copper and brass will be consumed. Specifications call for the use of copper flashings, cornices, gutters and spouts. All pipes in the hot water system will be made of drawn brass tubing and fittings will be of heavy hard brass.

In the past fiscal year there were 978,163 immigrant arrivals in the United States and 426,031 departures. Excess immigration therefore was 552,132. In the preceding year arrivals numbered 621,576 and departures 429,062, excess immigration being 193,514. Italians and Hebrews were the two largest racial groups of immigrants.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

Business in the steel industry is gradually broadening in a moderate way, most of the incoming tonnage reflecting current needs of consuming interests. In the Pittsburgh district sheet mill schedules have advanced from a low of 20 per cent to about 45 per cent, with indications of further expansion before the end of January. Bulk of the sheet tonnage calls for immediate delivery. Some forward business is being planned, but most of the buying is of the hand-to-mouth variety.

A more hopeful feeling prevails among the larger of the independent steel concerns for continued improvement in business than for some time. An increase in the volume of orders is anticipated by several, while others assert they are getting more inquiries than for several months. A reduction in freight rates on iron and steel by the railroads would start all of the mills going, it is contended. This, it is claimed, is one big drawback to prosperity and is keeping the mills down to a low percentage of operations.

Interest in the use of the inland waterways system of the country for delivery of steel products continues to increase. The Jones & Laughlin Steel Company, which was the pioneer in this field, is gathering material for another big tow, which will move southward on the rivers late in the winter. The Carnegie Steel Company is planning a very extensive use of the river system in a similar way. The American Steel and Wire Company is sending several barges south during the forthcoming week from its Donora works, and the National Tube Company will have one or more barges in the same tow.

A good many sheet and tin plate mills are resuming operations, but most are operating irregularly. This is especially the case with sheet mills. Bar mill operations are practically marking time with volume of demand slightly better. No change is found in any price quotations of these products.

Wire nails are showing gains, but very moderate ones. The hesitancy in the market over the stability of the new prices is blamed for this slow recovery. However, the base of $2.50 per keg on nails and $2.25 on plain wire is being ably supported now in renewal of contracts and replenishment orders from jobbing interests. The feeling of confidence in wire prices is growing stronger.

The absence of actual booking of plates just now is partly due to the drop in oil prices, which has eliminated some of the plans for oil storage tank systems contemplated, but there is much inquiry for car material, and plate demand is expected to show marked improvement. The needs of the war caused a vast increase in the capacity for steel plate making, which normal demand under most favorable circumstances could not absorb, hence the plate market is not expected to show rapid changes in values. On the other hand, inquiries for structural material have gained so much in volume of late that a firmer tone to this market is expected shortly. At present, however, the 1.50 cents base on plates and shapes is fairly representative of the market.

There has not been much, if any, improvement in the pig iron market in the Eastern district, though reports from the West have been more favorable. Of late the principal supporters of the New York market have been the manufacturers of radiators and other heating apparatus. There have been a number of small lots placed in the same territory at prices reported to have been based upon Buffalo No. 2X iron at $19.50 and Eastern Pennsylvania at $20.50 at the furnace. Buffalo interests appear to have been somewhat anxious sellers and have not been very particular, in effecting sales, to differentiate closely between grades. Hence we hear of No. 2 plain and No. 2X being offered at the same price. In the Birmingham district reports have it that the price has reached nearer a $16 base. Numerous lots were placed in Ohio and other points in competitive fields at $16.

The Connellsville coke region is following rigidly the furnace needs for coke, and as a result curtailment of production last week was to 17 per cent of normal capacity. Prices for coke are unchanged, with $3 on furnace and $4 on foundry, except under duress conditions on far off grades, where a shading of 25 cents has been noted.

Without a betterment in demand for steel making pig iron the scrap market is not able to perk up much. Prices are very weak and trading lifeless. Dealers are proceeding cautiously in accumulating stocks and are inclined to bearish sentiment for the immediate future. Prices for pig iron are quoted as follows:

No. 2 Pittsburgh	$21.46@$21.96
No. 2X Philadelphia	21.34@ 21.76
No. 2 Southern, Birmingham	16.00@ 16.50
No. 2 Chicago	19.00@ 19.50
Basic Valley, furnace	18.25@ 18.75
Bessemer, Pittsburgh	21.46@ 21.96

Copper.

The week closed on Saturday with the market quiet in copper, if some moderate business for export be excluded. Some small holders, depending upon domestic consumption, have found the long period of dullness to have pressed too heavily upon their endurance, and they have been offering limited quantities at from ⅛ cents to ¼ cents under the established price. Small sales have been currently reported at 13¾ cents for prompt delivery, and even 13⅝ cents has been rumored. The larger selling concerns are not interested in this business. They realize that these loose ends, always peculiar to a spell of quiet, must be left to wear out, and that there would be little to gain and everything to lose by competing. The tone of the larger market, however, is easier for the more distant positions, and February and March are openly offered at 14 cents against 14⅛ cents to 14¼ cents demanded not long ago. In fact, it is difficult to see that anything would be gained by asking either more or less, and the figures merely furnish a basis for negotiation for any important business.

Tin.

There has been no better than a moderate consuming demand for tin, and the New York market is dominated by the London quotations and exchange. The price quoted for Straits at the end of the week was 33¼@33½ cents as to position. Arrivals during January have been 2,875 tons at Atlantic and 40 tons at Pacific ports. Tin afloat is estimated at 5,350 tons.

Lead.

At the close of the week the market for lead remained quiet and without new feature. Spot stocks in New York have been limited and at times commanded a premium. Prices at the end of the week varied between 4.70 cents and 4.80 cents, as to the grade and seller, and East St. Louis was steady at 4.40 cents to 4.425 cents.

Zinc.

Consuming interest has been wanting and the market was easy but unchanged at the end of the week. On Friday the Metal Exchange lowered its quotation for New York delivery 2½ points to 5.10 cents. East St. Louis quotations were also down 2½ points to 4.75 cents for spot and January.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum Powder .....60 to 65 cents per lb.
Aluminum (in 50-ton lots) 99% and purer..25 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	10⅞ to 11⅛ cents	11⅞ cents
Copper, light	8⅝ to 8⅞ cents	9⅞ cents
Brass, heavy	5¼ to 5½ cents	6¼ cents
Lead, heavy	3⅞ to 4 cents	4¼ cents
Lead, heavy	3⅞ to 4⅛ cents	4½ cents
Crucible copper	11¼ to 11½ cents	12¼ cents
Zinc	2½ to 2½ cents	3 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying	Selling
Heavy yellow brass	5 to 5¼ cents	6¼ cents
Brass, light	4 to 4½ cents	5½ cents
Red brass	8 to 8½ cents	9 cents
Copper, heavy	9½ to 10 cents	10½ cents
Copper, light	7 to 7½ cents	8½ cents
Lead, heavy	3½ to 3¾ cents	4 cents
Zinc,	2½ to 2¾ cents	3¾ cents

In the New York Supply Market.

New York, N. Y., January 14.—The New York supply market just now is in the position of having cleared its decks for action and not yet got it. Stocks have been written down (or, in one or two cases, up) to current values and prices have been undergoing a general readjustment. With these matters all in order, local supply houses express the greatest optimism regarding the outlook. It is felt that the tide is bound to turn in the near future and that when it does turn it will carry with it a great deal of business that has been accumulating for some time past. According to one well-known plumbing and heating contractor, industrial building in New York City is five years in arrear, and this has reacted seriously against the prosperity of the local supply market.

The only price changes noted this week are in malleable and cast iron fittings. In the former case the discount has been increased from 5 per cent to 10 per cent, while cast iron fittings are now 32 and 5 per cent off against a former straight 32 per cent. Some manufacturers, while following the lead of a falling market, are making the reduction one of 37 per cent straight and there are rumors to the effect that one or two houses are actually giving 37 plus five per cent.

The recent reduction in soil pipe has not yet proved itself the stimulus to demand that was anticipated, but this is not causing any surprise. At this time of the year demand is at its minimum and, as one supply man expressed it, "the plumbers won't buy until they need the goods because they figure that there is always a chance of another price decline."

Wrought iron and steel pipe is in much the same position, with demand lagging in spite of a recent price readjustment in the latter line. Pottery ware, enameled goods, and bathroom equipment generally, all of which have found new price levels in recent weeks, are marking time so far as the demand is concerned. Brass manufactured goods also are quiet in spite of recent attempts to inject a little activity in this market, and the heating equipment demand is now approximating normal with current business met and stocks replenished.

In spite, however, of this evident stagnation of demand in almost all lines, the prevailing spirit is one of optimism. Most of the local supply men seen this week by the representative of "Domestic Engineering" express themselves as looking forward with confidence to the spring, when it is expected that the revival of building activities and the probable extension of the tax exemption date limit will call for a great deal of plumbing.

"We get a little business here and a little there," said Elmer Doolittle, manager of the Central Plumbers' Supply Company. "We don't expect to do very much at this time of the year, but there is a general feeling that the spring will see a greatly increased demand for all kinds of plumbing supplies. It will be well by the bye when these Federal investigations are all settled, one way or the other, for they promote an unsettled feeling in all concerned and are apt to undermine confidence as between the sellers and the buyers."

"Prices have not shifted this week except for the drop in malleable and cast iron fittings," said a representative of Arnold Behrer & Sons. "In a general way the stage is set for a good revival of business all round and we are hoping this will materialize in March or April when the building trade gets active again."

"No change in any of our lines," said a representative of the United States Sanitary Manufacturing Company. "We made a general price readjustment a few weeks ago and this has received a very favorable response considering the time of the year."

"Business is all right," said Sales Promotion Manager Noonan of the American Radiator Company, "but we have to get out and hustle for it. There's plenty of business about, but it's no use waiting for it to be handed in on a silver plate as it was during the war."

In the Chicago Supply Market.

Chicago, January 19.—Comparative inactivity has held the Chicago supply market during the past week. Here and there manufacturers report a slight increase in sales due to jobbers filling out their depleted lines but in general trade has been dull with only a nominal amount of material moving. Prices remain unchanged from last week.

E. W. Sanborn, of Sanborn & Lindeblad, reports a good increase in the sale of range boilers which he believes indicates that the anticipated spring buying is about to get started in earnest.

J. M. Weil, of the Weil-McLain Co., says that, while actual buying is not especially good, there is an unusually large amount of prospect business, which he feels speaks well for the future.

The manufacturers are attempting to keep up their output for two reasons. In the first place, they cannot afford to further curtail production without raising prices, and in the second place, they realize that when orders do come in, they will be marked "rush" and "immediate delivery"—having a tendency to overcrowd the mills.

Everyone interviewed says, and has been saying, that the outlook is good for the future, that a period of good sound normal activity is not far off, but a few cannot refrain from voicing the opinion that the good times seem to be just a trifle too modest about presenting themselves.

Get the "Bath a Day" sticker habit.

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

The only thing certain about the building situation in Chicago this week is its uncertainty. The Citizens' Committee claims a victory in that the general building strike heralded for last week failed to materialize; but to many this is only postponing the inevitable show-down that must come before building in this city can be put on a safe and sane level with some possibility of its remaining there.

Chicago contractors report very few new contracts signed in the past week. On the other hand, they declare that they have been called upon to estimate on a large number of contemplated jobs. This would seem to indicate that there is a large amount of work hanging fire which will be started, in all probability, as soon as the building trades and the contractors have solved the present wage award problem.

Another indication of plenty of building in the near future is the figures in the office of the Building Commissioner on permits issued in the past week. For the week ending January 14th building permits with an estimated valuation of $2,362,100 were issued. The largest individual permit was for a $500,000, 74-flat apartment building; there was another one for a $250,000 building of the same type and several ranging close to $100,000 apiece. Permits for that week show that residences and apartments constitute 75 per cent of all buildings to be erected. Permits for the first two weeks in 1922 total $3,237,550, an amount almost equal to the total for the entire month of January, 1921.

The plumbing contract on a two-family building to be erected at 4157 North Maplewood Avenue, for S. J. Dale, has been awarded to William Mallow, 4343 Lincoln Avenue.

G. F. Winkler, 841 North State Street, has been awarded the plumbing contract on a two-story church, school and hall now being constructed for the First Baptist Church of Evanston, Ill.

Marcus Weil, 3150 West Chicago Avenue, has been awarded the plumbing contracts on a store, flat and office building being erected at Ashland and Howard Avenues. The building is of brick and stone, and modern sanitary plumbing will be installed at a cost of about $15,000. Mr. Weil is also doing the plumbing work on a two-family building in course of construction at 5030 West Adams Street. This contract amounts to about $3,000.

Baldwin & Glasson, 208 North Wells Street, are installing a steam heating system in the new six-flat building that is now being completed at 1424 Elmdale Avenue for John Erikson. The heating contract amounts to $3,300.

The plumbing contract on a new two-story residence, soon to be built in Oak Park, has been awarded to P. K. Clayton, 1949 North Western Avenue.

A contract for plumbing that will amount to about $3,500 on three new residences in Glencoe, Ill., has been awarded to Ben Kaplan, 1526 Belmont Avenue. Built-in bath tubs and other fixtures of the most modern and attractive design that it is possible to obtain are to be installed in these residences.

Indiana

Indianapolis.

The firm of Freyn Bros., of 31 West Michigan Street, Indianapolis, has obtained the contract for the installation of plumbing in the Highland Golf Club's new clubhouse to be erected at a cost of $100,000 on the banks of White river, west of the city. The heating contract on the new structure has been awarded to the W. H. Johnson & Son Co., 330 East St. Joe Street, Indianapolis.

Evansville.

The fourth annual convention of the Associated Building Contractors of Indiana, which will be held at Evansville, on January 24 and 25, is expected to be one of the most important gatherings the contractors of Indiana have ever held. Coming at a time when every effort is being made to inject stability into the building construction industry that building operations for 1922 may live up to, or be given a chance to live up to its predictions, it is expected to attract hundreds of leading contractors from all parts of the state. The event, it is pointed out, will give the various contractors of Hoosierdom an opportunity for an interchange of ideas and of finding out what has been accomplished and what is in contemplation for 1922.

Gary.

Gary spent $3,131,427 for the erection of new buildings or the improvement of old ones during the year 1921, according to an estimate given out by the city building commissioner. This indicates, the commissioner says, that building continued almost at its normal rate despite unprecedented obstacles, consisting of the national business depression, labor disputes and the high costs of material. Only three times in the last seven years has more money been spent in Gary for building operations than in 1921. The biggest building year in that period was in 1919 when 1,155 permits, valued at $5,369,742 were issued. The second big year was in 1917, when $4,122,286 was expended for the erection and improvement of 1,176 buildings. In 1920 there were 737 permits granted on property valuations of $3,379,524.

Of the 910 permits issued during the year 1921, 685 were for the erection of new buildings the cost of which amounted to $2,758,112. That there was a decided increase in the building activities of the residential districts is shown by the fact that 258 permits were issued for the erection of residences totaling $968,900. Next in line of new construction was garages, there being 197 of them erected, at a cost of $102,360. The report shows the construction of 49 flat buildings at a cost of $584,800, twenty-six flat and store buildings at a cost of $261,400, and twenty-nine store buildings at $141,777.

The largest amount of money spent on buildings of any one type was, according to the report, expended on those of brick construction, there being 145 of these erected at a total cost of $1,420,070. The number of frame buildings far outnumbered those of any other kind of construction, 409 of these having been built at a cost of $625,420.

Cleveland.

Probably the most important development affecting the the heating and piping trade this week is the announcement of Mayor Fred Kohler that the new public hall will not be opened until it is complete in every detail and turned over to the city in that condition. The reason this statement is of significance to heating and piping contractors here is that a good deal of money and time has already been spent by the Heating and Piping Contractors' Cleveland Association on an exhibit for the American Building Exposition, which is scheduled to open the hall on February 22.

Were the plan of the mayor to remain as it is, and the hall not be made available to the building show, this enterprise, with several others, would stand to lose $1,000,000, officials of these ventures assert. At the same time it is hinted that the city may face a suit for a large sum, since it is too late to forego the plans, particularly those of the building show, since nearly all space has been taken, according to Ralph P. Stoddard, managing director, and many exhibits completed ready for installation or nearly so.

The Heating and Piping Contractors' Cleveland Association, like other trade associations and industrial organizations, are going ahead with plans on the assumption that the mayor will be induced to change his mind. T. G. Mouat, of the Mouat-Squires Co., is a director of the building show.

In the matter of real business, a more encouraging feature is the result of 1921's building over that of 1920, which, as predicted in this column, would run ahead. All told there were 12,926 projects of all kinds for 1921, against 11,531 in 1920, yet the cost was less, being $46,500,000, against $65,600,000 in 1920. This reduction was due largely to a marked decline in the price of materials and supplies. Frame dwelling construction led by about 25 per cent of the 1920 showing, and brick residences and apartments also made a favorable gain, all offering encouragement to the smaller contractor. Public work was bigger, due to bond issues that permitted the construction of schools, hospitals and the like, offering much work for the larger contractors, and upon which they are now working. Industrial construction was the only division to fall off, there being about one-third as many factory structures planned.

Even if no new projects of large size are developed, heating and piping contractors and plumbing contractors assert there is enough to keep the trade going for another two months, until the building season starts again.

H. W. Eckhardt, Cleveland, president of the Ohio Master Plumbers' Association, is completing appointment of committees for the convention of the state organization at Canton next month, and these will be announced shortly.

James H. Herron, of the J. H. Herron Co., heating and ventilating engineers, was the principal speaker at the mid-month meeting of the Cleveland Chapter, American Society of Heating and Ventilating Engineers. Mr. Herron reviewed the work of the smoke nuisance survey in Cleveland, a report of which was made to the Cleveland Community Betterment Council. Mr. Herron showed that much the same plan that was adopted for surveys in Pittsburgh and London was used here. Mayor Fred Kohler has promised to aid in abating the nuisance, he told the members. The samples obtained in the Cleveland survey were taken at hospitals, explained Mr. Herron, primarily to note the effect upon health. The work lasted six months. The survey showed that Cleveland is second only to Pittsburgh of both American and English cities as a smoky city, Mr. Herron said.

Henry Barrett, 647 Main Street, Hartford, has submitted preliminary sketches for a Masonic Temple to be erected at Wethersfield by the Wethersfield Masonic Hall Association. The structure will be erected in the spring. Edward R. Woodhouse is president of the association.

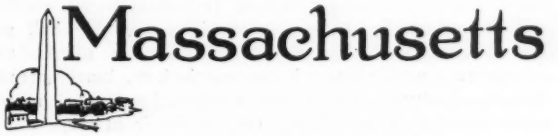
The Eastern Heating Co., of New York, has the contract for installing the heating plant at the Charter Oak Machine Co., at Hartford.

The Stafford Boys' Club, of Stafford Springs, will soon call for bids for the installation of a new heating plant, bathrooms and shower baths in its clubhouse.

Kent School at New Milford, a private school, is having plans prepared for new buildings by Architect E. Q. Sylvester, 8 Beacon Street, Boston. The buildings will include a gymnasium, dining hall and several small dormitories.

Architect L. Eugene Conway, of New London, has prepared plans for three houses to be erected for Dr. E. A. Henkle, 51 Federal Street, New London. Contracts for heating and plumbing have not been let.

The Associated Architects & Engineering Co., 145 State Street, Springfield, Mass., associated with Reed & Thorpe, of 60 Prospect Street, Hartford, are preparing plans for an automobile building on the Connecticut Boulevard at Darlin Street, East Hartford. Brick, one story and basement, 122x50 ft., with ell 122x15 ft.



Boston and Vicinity.

Directors of the Massachusetts Master Plumbers' Association were scheduled to hold a conference with representatives of the Massachusetts Association of Journeyman Plumbers for January 19th at Boston. This conference was arranged at the suggestion of the journeymen. In addition to laying out proposed zone work at this meeting, the directors planned to take the initial steps for the annual meeting to be held in April. One of the principal matters now occupying the directors is to secure the employment of more helpers and apprentices in the plumbing business and to aid ambitious young men to attend trade schools where they may learn the plumbing business. This action is necessitated by the shortage of such employees which is becoming more acute as the time for spring building operations approaches. Ways and means in which to get young men interested in the work will be discussed.

At the annual meeting of the Boston Building Trades Employers' Association, January 3rd, at the Boston City Club, Edwin W. Cox, of Pierce & Cox, and former president of the Boston and Massachusetts Master Plumbers' Associations, was elected one of the two vice-presidents. Parker F. Soule, of L. P. Soule & Son, building contractors, was elected president; John V. Beekman, Jr., was elected first vice-president, and Albert D. Howlett of the Albert D. Howlett Co., was elected treasurer. Among the fifteen building trade organizations represented at the gathering were the Boston Master Plumbers' Association and the Heating and Piping Contractors' Boston Association, Inc.

Other Cities in the State.

Phillips Academy at Andover will award contracts within a few weeks for the construction of a new dormitory, plans for which are now being completed by Architect Guy

Lowell, of Boston. The structure is to be of brick and will have three floors and basement, with suites on the first floor for instructors and families, and on the second and third floors will be rooms for 70 students. The building is to be ready for occupancy by next September.

If the Massachusetts Legislature grants permission, the city of Waltham will erect a new $750,000 city hall next summer.

Walter K. Oliver, of Lynn, has prepared plans for two buildings, to be known as the Corinthian Apartments, to be erected for William Sargent at 151 Chestnut Street, at a cost of $40,000. Wood and stone, 33x138 ft., three stories and basement, to contain 21 suites. Garages for each suite will also be erected in a separate building in the rear.

Howe & Manning, of Boston, are architects for a $25,000 apartment house to be erected in Lynn in Grosvenor Park.

The Jordan-Marsh Co., of Boston, will add two stories to its eight-story annex at Bedford and Chauncey Streets, 70x100 ft. Bigelow & Wadsworth, of Boston, are the architects. No contracts have been awarded.

Plans for additional schoolhouse accommodations, to cost between $400,000 and $500,000, have been submitted to the Salem city council, the buildings to be erected during the summer. The plans call for two new 12-room buildings and large additions to two existing buildings. An alternative plan, calling for a $300,000 addition to the High school and additions to two other buildings, is submitted.

The city of Quincy has asked for bids, which close January 23rd, for a new High school building to cost approximately $750,000. Plans have been prepared by Architects Cram & Ferguson, of Boston. These provide for a trade school department, and plumbing and sheet metal working will be among the trades taught. The assembly hall will seat 1,500 pupils. There will be 26 class rooms, two gymnasiums with shower baths and lockers, lunch, manual training, cooking, sewing and continuation school rooms, administration offices, library, etc., in the front section with trade school rooms in a second section.

Rhode Island

Providence and Vicinity.

The Pine Crest school at East Providence will be erected by the Pawtucket Cabinet & Builders' Finish Co., and this concern will award sub-contracts.

The Board of Contract and Supply of Providence has asked for bids for an 18-room schoolhouse on Sackett Street. Bids close January 30. Plans were prepared by the board under the direction of the public property committee.

Harry Marshak, 310 Strand Building, Providence, is soon to ask for bids on a two-family brick house on Mayflower Street for Harry Charen, a similar house on the East Side for Peter Woolf, and a brick business block and garage on North Main Street near Exchange Street, in Pawtucket, for Joseph Perceley.

An addition to contain 12 class rooms will be added to the St. Louis Parochial school in Woonsocket from plans by Walter A. Fontaine of that city.

Stone, Carpenter & Sheldon, architects, have charge of alterations to be made in the Francis Building, Providence, for the National Bank of Commerce, which will occupy the building when it is completed.

Bids will close soon for the new chemical laboratory to be erected for Brown University at Providence. Day & Clauder, Philadelphia, are the architects; French & Hubbard, Boston, Mass., engineers. The building will be of brick, three stories, 50x224 ft., fireproof construction.

Missouri

Kansas City.

As an indication of the extent of the plumbing business in Kansas City, in 1921, and what it will be in 1922, the following summary of a report of the superintendent of buildings, Matthew S. Shinnick, is submitted. There has been some talk in certain quarters about business being dull, and the prospects not overly bright, but it will be seen that the conditions are so much better than they were in 1920, that there is every reason for encouragement. Indeed, plumbers are saying that they have no right to complain, and that business has been exceptionally good with them during the year. This claim would seem to be justified by the increase in building activity during the year.

In the year ending December 1, there were issued in Kansas City, permits for the erection of 4,510 buildings. This was an increase over the year before for the corresponding months of 824 permits. The estimated cost of the buildings for which permits were issued during the past twelve months was $15,097,375. This was an increase over the year before of $1,278,000. The outstanding feature of the building program for the year was the erection of dwellings and apartments. The number of dwelling permits increased from 816 to 1,680; and the estimated cost from $3,077,700 to $5,324,500. There was a very large amount of remodeling, and there were additions made to 565 homes, at an estimated cost of $1,748,000. There were permits issued for 97 apartments and duplexes as against 22 for the year before, and the increase in the estimated cost is in excess of a million dollars.

There were no permits for large buildings issued during the year. The Federal Reserve Bank building, and the Kansas City Club building, which were finished during the year, secured their permits in 1919 and 1920.

A building that will give a big job of plumbing in 1922 is the one that was started as a home for the Kansas City Athletic Club. It was contracted for on the cost-plus plan, and was discontinued when it was found that the original estimate of less than $400,000 would have to be increased to over a million, on account of increased cost of material and labor. The steel structure that was put up has been purchased by Chicago parties who will complete it as a modern office building. The building will be a seventeen story structure, and will, it is said, be completed at a cost of $2,000,000.

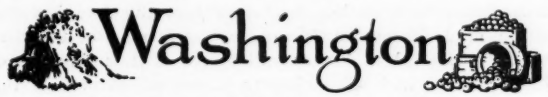
Looking into the future, contractors are taking into consideration the steady growth of Kansas City, and her suburbs, and the consequent demand there will be for homes. From figures compiled by the industrial commissioner of the Chamber of Commerce, it is claimed that Greater Kansas City now has a population in excess of half a million people. Greater Kansas City includes Kansas City, Mo., Kansas City, Kansas, North Kansas City, Rosedale and Independence, and the settled up territory in between.

Besides the new houses, most of which will be modern so far as plumbing is concerned, there is an ever increasing amount of business being done in the modernizing of buildings erected before it was the custom to install bathrooms, etc. One of the successful plumbing establishments of the city has built up its whole business by catering to this kind of business. The proprietor, who formerly had a hardware store, has closed that part of his business out, and is devoting all his attention to the remodeling of old houses. He claims that the profit is considerably better than on new houses, and that there is an unlimited opportunity for business in that field.

Portland.

The official estimate of building to be undertaken in Portland in 1922 has been placed at $21,500,000, exceeding that of the city's banner year of 1920, when more than $20,000,000 was expended in new building. With the World's Fair for Portland planned for 1925, business men and investors feel that it is none too early to plan new building projects, and to put the city in readiness to receive the hundreds of thousands of visitors who will pass through during the year. That residence building will be an important factor in the year's constructional activities, is indicated by the fact that in one day, early in the month, a total of 15 permits were issued for residences, ranging in price from $3,000 to $6,700.

A new Orpheum theatre, to cost $1,000,000, is to be built in Portland, according to statement of Martin Beck, President of the Orpheum Vaudeville Circuit, who recently visited Portland. Several sites are under consideration, and selection will be made within 60 days, Mr. Beck stated.



Seattle.

According to figures compiled by the superintendent of buildings, building operations in Seattle during the year 1921 exceeded by almost 1,000 the number of structures completed in 1920.

During the year 11,040 permits were issued, with a total valuation of $12,825,160. Of this number, 1,773 permits were for residences, valued at $4,310,230. The superintendent of buildings also states that a number of permits, covering important proposed construction projects, have been applied for, but that plans have not been examined, or are pending in the department. These permits call for a 13-story office building to cost $1,000,000, to be built by the Dexter Horton Estate, an addition of two stories to the Central Building to cost $150,000, several business blocks and two apartment buildings. Superintendent of buildings, James E. Blackwell, in a public statement recently said: "Contractors and people contemplating new homes now realize that the bottom has been reached for materials. There is every indication that lumber prices from now on will go up, rather than down."

In a public statement recently, E. H. Norton, of the firm of Norton & Spangler, and president of the Seattle Master Plumbers & Heating Engineers' Association, discussed the prospects for 1922 as follows:

"The plumbing and heating business, like all other lines of trade in Seattle, has great hopes for the new year. There is no question about this city coming to the front in the business world. We need more modern buildings in every sense of the word, hotels, apartments, and office buildings, which means new developments in the building industry, of which the plumbing and heating is such a vital part.

"The responsible plumbing and heating contractors are ready to go, and will do their part in the revival of the building business. The very optimistic feeling all over the country makes us believe that we are at the beginning of the most prosperous five years we have ever had. Building will get a good start during the coming year, and by the time December 31, 1922, rolls around, we will have reached the stride which the national, state and local associations of master plumbers are working for.

"The public is being gradually educated to realize the necessity of sanitation in their homes and public buildings, and when the public understands the great work the plumbers are doing, they will agree that 'A bath a day keeps you fit.' We don't believe that anyone would willingly go back to the old tin tub or to carrying water from the pump, yet it is surprising how many places one can find right in the heart of big cities such as Seattle, where modern plumbing is badly needed, and the number of people who would rather have a piano than a bathtub in their home. That may be due to the fact that the plumbing and heating contractors haven't adopted the installment system in their business; their aim being at all times to keep the cost as low as possible. Then, too, many plumbers are over modest, and this keeps them from advertising."

H. B. Vaughn, manager of the Commercial Plumbing & Heating Co., 826 Jackson Street, has announced that his firm received the contract for both plumbing and heating in the C. A. Hultin Building, 1429 Jackson Street. The structure is to be remodeled into an up-to-date apartment house, and the work involves considerable new plumbing work. The Commercial Company also recently completed the installation of both plumbing and heating in the Lambda Association sorority house in the University District, and the plumbing and heating in a pretentious residence at 32nd Avenue South and College Street for Dr. Dishman.

Contract for general work in connection with the proposed new Columbia School, to cost $150,000 completed, has been let to Jenkins & Kaufman, Hinckley Building, on their bid of $91,431. Sub-contracts for plumbing, heating, ventilating, will be called for in the near future.

Martin Beck, president of the Orpheum Vaudeville Circuit, who was recently in Seattle, announced while here that he plans the erection in 1922 of a theatre in this city, to seat 3,000 persons, and costing between $750,000 and $1,000,000. The house will be one of a string erected on the Pacific Coast, and will accommodate the Junior Orpheum Vaudeville. Three sites are under consideration, and Mr. Beck stated that selection will be made in the near future.

Other Cities in the State.

All records for the number of building permits issued in 12 months in Tacoma were broken during 1921, when the building inspector's office issued 4,634 permits, with a total valuation of $3,460,397. A striking feature of the building situation for the past year was the number of permits for residences, a total of 784 being issued, as compared with 421 for the year 1920. The valuation of the residences was $1,638,540, or nearly half of the total valuation of building for the year. During 1921, permits were issued for 12 apartment houses, as compared with two permits in 1920.

Construction of the first community apartment house in Tacoma has been started by Albert Miller. The new structure will cost approximately $30,000 and will be three stories high, containing six five-room apartments. It will be built by day labor, with contracts let for plumbing and heating.

Another apartment house in Tacoma will be built at once, plans having been completed by Sutton, Whitney & Duggan, architects. The structure will be built by Charles L. Epps, at North 3rd Street and Yakima Avenue, and will cost $35,000. Building will have three stories and basement, containing 11 apartments of two and three rooms each. A hot-water heating system will be installed.

The record for new home building in Spokane for 1921 is the best in 10 years, according to the city building inspector, who states that a total of 431 new homes, valued at $1,148,844 were started, as compared with 143 new homes, costing $480,400 in 1920. House construction continued later into the fall than for many years past. An interesting point is the fact that the average cost per house in 1921 was $2,665, or about the average for 1918.

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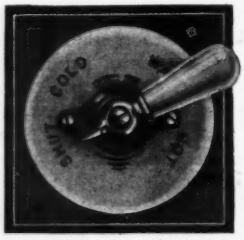

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California

San Francisco.

With slight reductions continuing in the local journeyman plumbers' wage scale, business in and around San Francisco is bound to suffer to a small degree. Part of the prospective plumbing contracts seem to hang in the background, waiting for the apparent period of uncertainty to end. But in view of all this uncertainty, there are quite a number of contracts being let every day, although business is, at the present time, far from normal.

Mr. Hahn, assistant secretary of the Master Plumbers' Association, has voiced his opinion on the matter and he states that if the wages of the plumbers had been reduced one dollar at the start instead of the several small reductions, which have kept every one in the anticipation of further reductions in the prices of plumbing, business would by now, without doubt be normal.

John L. E. Firmin, secretary of the Master Plumbers' Association, states that he has been informed of an arrangement that has been made between the National Trade Extension Bureau and C. H. Bohrer, manager of the educational department, to have Mr. Archer, one of the field lecturers of the Trade Extension Bureau, lecture in most of the cities on the coast. Mr. Archer will arrive in Los Angeles on January 19th, and will deliver a course of lectures in that zone from the 19th to the 29th, inclusive. From Los Angeles, Mr. Archer will leave for Bakersfield, where he will spend one day lecturing in and around that city. On the 31st he will be in Fresno and vicinity. From February 1 to 10, Mr. Archer will be in San Francisco and will lecture in all the bay cities. From San Francisco, he will go to Sacramento, where he will spend one day in that city and one day in the vicinity. Next he will visit the northern part of California, lecturing in most of the cities. He also will attend the state conventions in Oregon and Washington. After that, Mr. Archer will place himself at the pleasure of the state executives to lecture in any locality.

Members of the Master Plumbers' Association, are to be the guests of the Pacific Gas and Electric Company, at its gas laboratory at 241 Stevenson Street, at which place the plumbers will hold their next meeting which is scheduled for the 20th of January. They will be entertained by prominent speakers and, to quote John L. E. Firmin, will afterwards enjoy a "collation." The standing joke around the headquarters of the Master Plumbers' Association, is that this word means the half-way point between coffee and doughnuts and a banquet, and being a gentleman, Mr. Firmin has chosen to be polite, hence this explanation.

The apprentice situation in San Francisco, which has met with a slight upset, due to the wage board using the word "helper" instead of "apprentice," in which they granted the helper $6 per day, is now progressing with a fair degree of swiftness. W. P. Goss headed a committee recently which made a visit to the arbitration board for the purpose of defining the word "helper," which, in the eyes of the wage-board, meant practically the same thing as a brick-layer or carpenter's helper.

The efforts of the committee were successful and it was finally decided that the word "helper," as used in this case, meant an improver. It was finally changed back to its former meaning so that inexperienced men cannot command a salary of $6 per day, as would have been the case had not the committee made such a strong fight.

The M. Stulsaft Company's executives and employees held their annual dinner, recently, at one of San Francisco's noted hotels. Morris Stulsaft, president of the company, gave a very interesting summary of general business conditions dur-

ing the past year. There were short talks by several of the managers and salesmen of the various branches and departments.

S. W. Band has been awarded the plumbing contract for an apartment house with eight apartments at Hayes Street and Central Avenue. The estimated cost is in the neighborhood of $2,500.

Frank Davison has been awarded the plumbing contract on the warehouse of the Bothin Real Estate Co., Folsom and 2nd Streets. The estimated cost is $2,000.

Los Angeles.

Los Angeles has made an enviable record in building for 1921 and expects 1922 to be the greatest year in her history. The valuation for this year just closed totals upwards of $83,000,000. The rapid growth in population has made it necessary to increase the number of school buildings, and the board of education has let contracts for buildings aggregating $3,500,000, and during 1922 a similar amount or more will be expended to meet the urgent demand. $275,000 has been appropriated for the Roosevelt high school on the east side and $280,000 for the Junior high school on Bronson Avenue.

Architect Elmer Grey, 507 Wright and Callender Building, has completed plans for an Italian style residence to be erected on Rassmore Avenue near First Street. The structure will contain eighteen rooms, four sleeping porches, six baths and lavatory, unit gas heating system and automatic water heaters, and will cost $50,000.

Plans are being prepared for a one-story brick store building on Hill Street near Eleventh Street. The building is to be 100x150 ft. and will contain eleven stores.

Architects Noevenberg & Johnson, 401 Los Angeles Ry. Building, are preparing working drawings for a two-story brick commercial building, corner of Eighth Street and Stanford Avenue, for Robert Nuccio. The building will be 90x70 ft. The first floor will be used as a plumbing shop, and the second story will be used as a loft.

Architect Harwood Hewett, 1130 Van Nuys Building, is preparing preliminary plans for a large residence to be erected near Los Feliz Road and Vermont Avenue. The residence will contain sixteen rooms, with four baths, and unit gas heating system. The same architect is preparing plans for a fifteen-room residence, with four tiled baths, to be erected at Riverside.

The New Hampshire Hotel Building, on Broadway, between Eighth and Ninth Streets, is to be remodeled at an expense of $30,000. Ventilating and refrigerating systems will be added.

The Chief Petty Officers' Association of the United States Navy has announced the selection of San Pedro as headquarters for its supreme council. It is planned to erect a clubhouse to cost approximately $100,000 on a site near the fleet landing.

Other Cities in the State.

The Catholic church is erecting a brick parish hall and school building at San Bernardino from plans prepared by Architect Albert C. Martin. The edifice will contain an auditorium to seat five hundred, and seven class rooms to cost $45,000.

Ed Turner, 118 E. Park Avenue, Glendale, is having plans completed for a one-story brick block to be divided into three stores. The building will be located at 218-20 East Broadway.

A special election is to be called in Long Beach in January or February, to vote bonds in the sum of $1,925,000, for municipal buildings and improvements. The expenses contemplated are for a memorial auditorium and site, $1,000,000; for completing the new city hall, $175,000; for a rubbish incinerator and sewage disposal plant, $100,000; for site and first unit of community hospital, $100,000; for comfort station, $50,000 and $500,000 for parks and playgrounds.

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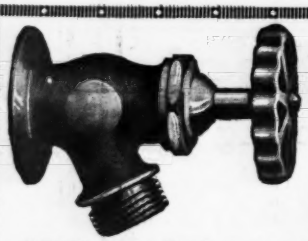

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THE BUILDING SITUATION IN CANADA.

Various authorities on the building situation in Canada agree that 1921 has been one of the best house building years which the country has enjoyed. There have recently been constructed or there are under construction more homes than at any similar period in the past. Secretary W. T. McGarvey, secretary of the Mason Contractors' Association of the United States and Canada, states that the number of new buildings erected in 1921 in Canada number 14,000 as compared with 11,000 in 1920. He contends that no industry has a brighter outlook in Canada than has building.

The amount of building done in 1921 in Canada is not fairly represented by the figures of value of permits issued because of the dearth of industrial and big building construction. A great many small homes have been built for speculation to relieve the house shortage and such construction has called for the production on a large scale of certain types of furnaces and sanitary equipment. Builders have formed organizations of various kinds in recent months for the purpose of raising capital for construction of such houses on a co-operative basis due to the fact that money rates are high. The result is that while one hears much about the slackness of the building industry, as reflected by figures of permits issued, one sees in nearly every city whole streets of new houses built to relieve the aforementioned shortage.

There are signs however that industrial and big building construction may be undertaken on a fairly large scale by spring. An official of the United States Steel Products Co. in Toronto states that bookings of steel for building construction are now much in excess of those of last year and that a healthy revival of office building, warehouse, factory and other such construction is expected to commence in the early spring. In many Canadian cities there is a lack of sufficient warehouse and office building space, but some industries have considerable space yet to occupy as a result of large extensions made during the boom years which have in many cases been vacated since the slack season has come. There is every indication however of industrial activity increasing after the first few dull months of the winter season are over and this may be followed with a renewal of industrial construction where required.

Efforts have been made for some time to bring workmen's wages to a lower level in order to stimulate building activity in Canada. Several conferences have been held during the year at which representatives of the government, the municipalities, the architects, workmen, supply men, manufacturers, etc., have gathered, but a deadlock always resulted due to the fact that the workmen considered building supplies had not declined sufficiently to justify them taking any decrease in wages. It is therefore of importance that George Gander, secretary of the Toronto Builders' Exchange, now makes the statement that the building trades in Toronto have agreed to a reduction of 10 cents an hour in wages. This decision was arrived at at a meeting composed of the directors and representatives of the various sections connected with the exchange, to consider the agreements with trades terminating on December 31. It was unanimously agreed that a reduction of 10 cents per hour on all trades should take place on the first of January. It was pointed out that now that materials have declined and contractor's profits have diminished, it was up to the unions to do their part.

It is stated as very probable that this will be followed by

similar action on the part of workmen in other centers in a co-operative effort to lower costs of building.

A prominent building contractor speaking before a recent public gathering in Toronto confirmed the previous statement that house construction in Canada this year compared very favorably with the past year. In speaking of the depression in industrial construction he pointed out that the totals for the year were less than one quarter of the volume for 1920. The lack of need for additional factory or warehouse accommodation was cited as the reason for this. The building figures would therefore represent a great many relatively small construction contracts. He pointed out that despite the fact that a fairly large number of homes have been built in Canada this year, there still exists an acute shortage of approximately 165,000 homes.

High freight rates have been held by manufacturers and supply men to have been largely responsible for high costs. The reduction which was put in effect on December 1 on Canadian railways has therefore been hailed as an important factor in reducing costs.

There has always been a good deal of discussion on the subject of comparative declines in wages and building supplies and in this connection it is interesting to note that while wages (average) in eight branches of industry in 1914 were 42.8 cents per hour this wage is now 86.6 per hr. an increase of 101 per cent while recent figures show building materials to be approximately 118 per cent above 1914 levels. The latter is thought to be high in view of the fact that the cost of living in Canada is now only about 63 per cent above 1914 levels. Construction costs have increased from 141.5 in 1914 to 403 in May, 1920 and are now around the 300 mark.

Cost of construction and rents are practically the only items to undergo little changes, and workmen in the building industry, while granting some slight concessions in certain quarters, have not joined workmen in other industries in accepting lower wages to stimulate activity and the result is that many men engaged in this industry are out of work and rents are increasing, while at the same time there is great need for housing accommodation. Labor has taken the attitude that when architects, general contractors and supply men curtail their incomes in like proportion to what is suggested for them, that they will be glad to follow. In reply to this the general contractors point out that 80 per cent of the cost of a building is influenced by labor alone, that 15 per cent represents the contractor's overhead and 5 per cent represents taxation and other such charges.

George Clapperton, of Bennett & Wright, Ltd., master plumbers, Toronto, states that costs are being lowered as much as possible, that an agreement has been reached with the men at a rate of 90 cents an hour where formerly $1.15 was paid and that steps are being taken which will probably increase the efficiency of the industry to the extent of 25 per cent.

Senator Robertson, Minister of Labor, points out that while it took $2.18 to purchase materials which $1.00 would have bought in 1914 and it took $2.01 to purchase labor which $1.00 would have purchased in 1914, yet building materials were on the down grade having declined from $2.84 as compared with $1.00 in 1914, while labor in this trade was practically at a standstill.

No doubt much building has been held up in Canada due to unsettled conditions. One architect in Toronto states that he knows of $8,000,000 worth of building in prospect in this city alone, which is not held up because of high costs but because of uncertain conditions prevailing which had to influence their recommendations to clients.

In this connection financing has been playing an important part. Loan companies have been reluctant to lend money for building because of a fear of lower values in future and the large discounts made necessary to builders on second

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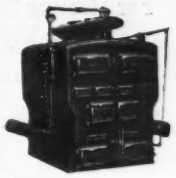

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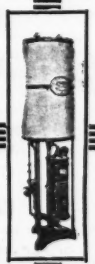

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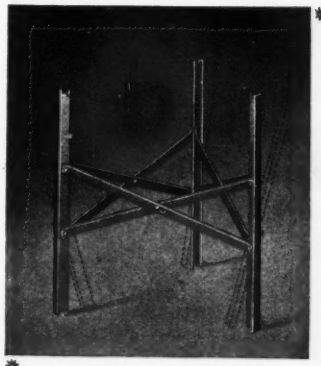

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INDIRECT WATER HEATER

mortgages have tended to raise the price to the buyer still further.

A review of the value of building permits issued in Canada shows an increase for the month of November as compared with immediately preceding months and a slight decline in value of permits issued to Nov. 30 this year compared with the first eleven months of 1920. Among the cities showing substantial increases in November are Montreal which jumps from $612,810 in November, 1920, to $6,275,960 in November, 1921. The big item in this was of course the Mount Royal Hotel for which a permit valued at $5,000,000 was issued. Building has been slack in the West, returns for November totalling only $763,880 compared with $846,-692 for November last year. The city of Toronto shows an increase from $1,816,937 in November, 1920, to $2,005,-680 for the same month this year. York township is one of the active centers reporting permits to the value of $679,200 compared with $179,350 last year and a total for the year of nearly eight million dollars against a little over four million for the eleven months ending November, 1920.

Among the larger permits recorded for November were the following: Victoria Baggage Co. warehouse, Victoria, B. C., $11,400; Mt. Royal Hotel, Montreal, $5,000,000; warehouse for Province of Quebec Liquor Commission, Montreal, $240,000; warehouse, $210,000; garage, $75,000; school, Hamilton, Ont., $40,000; 53 brick dwellings, $159,000; pumping station, London, Ont., $32,500; 32 dwellings at London, $101,000; Toronto, school, $175,000; school, $98,000; factory, $58,000; club house, $50,000; York Township, apartment house, $70,000; Saskatoon, garage, $10,000; Weyburn, laundry at Mental Hospital, $57,900.

Value of building permits issued in Canadian cities in November compared with this month in 1920 and also for the first eleven months compared with 1920 are as follows:—Halifax, N. S., $97,816, increase of $18,961. Total $2,159,-629, a decrease of over a million dollars. Moncton, $30,850, a decrease of $23,375. Total $689,070, decrease of nearly half a million dollars. St. John, N. B., shows a decrease of $286,800 compared with eleven months of 1920. Sydney, N. S., shows decrease of $131,310. It is evident from these figures that building in the maritime provinces was being done in 1921 on a much less scale than in 1920.

Coming to Quebec we find Montreal with an increase of $5,663,150 for the month of November, giving a total of $6,275,960, and with an increase for the eleven months of $7,140,880, or $20,826,335 for the first eleven months. Quebec city shows an increase of $971,756 for the eleven month period with permits valued at $3,192,576 issued up to December 1, last year. Westmount shows an increase of $455,853 for the eleven months compared with the same period in 1920.

Ontario cities which show increases and the amounts for the eleven month period in 1921 compared with 1920 are as follows:—Galt, $202,876; Hamilton, $352,180; Kingston, $60,-473; London, $410,865; Welland, $131,185; Windsor, $239,-695; York Township, $3,588,000.

Ontario cities showing a decline for this period compared with 1920 with the amounts of decline are as follows:—Brantford, $447,818; Chatham, $62,642; Ft. William, $131,-310; Guelph, $81,696; Kitchener, $321,392; Ottawa, $609,414; Peterboro, $127,432; Pt. Arthur, $98,707; Sarnia, $563,317; St. Catharines, $106,210; St. Thomas, $142,241; Stratford, $168,383; Toronto, $2,889,913; Woodstock, $166,324.

Despite all these declines, Ontario cities showed an increase for the eleven months of $6,635,480 compared with the same period in 1920, with total permits of $81,053,305 in 1921 period compared with $74,417,825 in the same period in 1920.

In the West we find Calgary showing a decline of $479,900 for the eleven months, Edmonton a decline of $1,719,459; Lethbridge declined $72,815; Medicine Hat increased $32,109.

In Manitoba, Brandon shows an increase of $348,985; St. Boniface a decline of $76,054 and Winnipeg a decline of $2,795,100.

In Saskatchewan Moose Jaw shows a decline of $1,027,788; Prince Albert an increase of $166,540; Regina declined $408,265; Saskatoon declined $377,739; Weyburn declined $2,274,936; Yorkton declined $213,825.

In British Columbia Kamloops increased $246,582; New Westminster declined $44,825; Vancouver declined $445,975; Victoria increased $84,471.

Totals for the Western cities show permits issued in November, 1921 of $763,880 compared with $846,692 in the same month 1920. For the eleven months permits totaled $19,063,883 in 1921 compared with $28,121,877 in 1920, or a decline of $9,057,994.

Totals for forty-five cities of Canada show permits issued in November totaling $11,232,587 compared with $4,820,806 in the same month in 1920. For the eleven months permits were issued of a value of $100,117,188 in 1921 compared with $102,539,702 in the same period in 1920 or a decline of $2,422,514.

BRITISH COLUMBIA.

Building Operations in Vancouver.

The number of houses built in Vancouver during the past year was almost twice those erected during 1920—so unexpectedly a good showing as to, at first glance, seem doubtful to the general public which has heard so much of the high cost of building and the money stringency. Yet it remains an absolute fact based on figures compiled by Arthur J. Bird, civic building inspector.

In 1920 Vancouver built 338 residences. In the year just closed it erected 633 at a total cost of $1,536,880. Statements of real estate men that there has been a steadily increasing revival in the erection of dwellings is amply borne out. A survey of building statistics reveals the interesting fact that while the total value of the permits issued was only slightly lower than in 1920, yet in the year just closed they did not include even one large building. In 1920, on the other hand, the total was swelled by the erection of two large buildings, the Capitol Theater, the largest in the city, and which cost $410,000 and the City Gas Works, which entailed an expenditure of $200,000. The value of building permits in Vancouver (up to Dec. 20th only) was $3,100,000 as compared with $3,709,873 in 1920 (the whole year).

Fifty per cent of the permits in 1921 were for new residences. Of the balance seventy-five per cent were chiefly for alterations and additions to stores. No less than 506 garages were built during the past year at an average cost of $100.

In all, 2,425 building permits were issued during the year just closed.

Without exception local architects and contractors express optimism as to the outlook for the new year. It is pointed out that no reason exists why, if Vancouver could build 621 residences in 1921, despite prices that were as high, if not higher than those which will prevail in 1922, it should not equal, if not surpass, this record in the coming twelve months. Again, in many cases, while tenders were secured, work on public buildings has been deferred. Many of those, it is stated, will be begun as soon as spring opens.

Negotiations have been begun looking to the completion of the Y. M. C. A. Building on Georgia Street, as an apartment house. An expenditure of at least $30,000 will be involved in this.

Two civic swimming pools are to be constructed at English Bay, one to cost $150,000 and the other $160,000. The city is also to build a new High School at a cost of $400,000.

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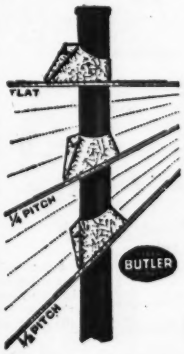

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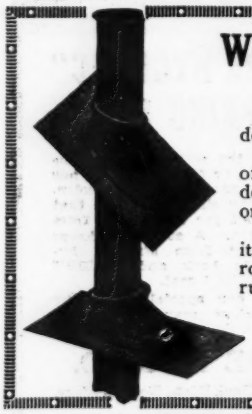

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Store in the city, is contemplating the erection of a new building opposite its present establishment and in the same style of construction which is up to date.

Spencer's, Ltd., and Woodward's—both large retail establishments—announce that they have in view the enlargement of their stores. At the present time the former own the whole block in which they are located.

In addition it is announced that a new modern retail store is to be erected on the corner of Granville and Robson streets at a cost of at least $60,000.

One of the most peculiar aspects of the building season for 1922 will be found in alterations to stores occasioned by the fact that Vancouver has started the new year right by abolishing the old left hand traffic drive rule—all vehicles running on the left side of the road—for the more modern and common rule—the right hand drive. Odd as it may seem, many merchants—particularly those who had profited considerably by being on corners where the street car public waited for cars—are trying to check the loss to their trade of the public using the opposite corners by installing more attractive store fronts; larger store doors and other alterations. Every change of this kind, of course, contributes a certain amount toward a general increase in building.

Builders, in general, are stating that a building boom is a certainty if there is any considerable decrease in the price of building materials, especially lumber. The labor situation, it is said, is steadily adjusting itself. Should, however, building material prices remain stationary, there will still be considerable building, which, it is stated, will be at least as extensive as in the year just closed and in all probability much more so. The present strong demand from Japan for British Columbia lumber has undoubtedly been a decided factor in maintaining prices throughout the Province. Its decline, it is predicted, would mean a substantial lowering of prices.

The Suburbs of Vancouver.

In the suburbs, conditions in general during the past year, are reported encouraging. New Westminster built 180 buildings during 1921 at a cost of $250,000, and officials declare that there is every indication that this will be far surpassed in 1922. Point Grey reached the unprecedented figure of $3,500,516 in building for the year, having added 696 new houses. A new record was established by Kerrisdale where a record was also set last year. The building in this suburb for the year just closed totaled $2,192,000. P. Vickerstaff, of the municipal staff, under whose jurisdiction building permits fall, states that he believes that the record set in 1921 for building operations will be more than maintained in 1922.

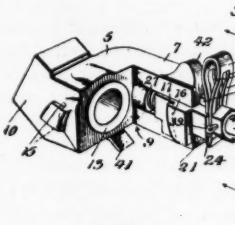
Lead Too Pure for Cathedral Roofing.

There is such a thing as too pure lead for roofing purposes. The ancient Gothic cathedrals of Europe were topped with this gray metal that blended well with the stone work and the style architecture. Lead was specified for the roof of the Episcopal cathedral of Washington, which is now being built, but after it had been applied for some time, it was found that sheet lead on the steep roof slopes had a tendency to flow downward of its own weight and the heat of the sun. The nail holes enlarged and allowed the metal to slip partially off. Metallurgists of the Bureau of Standards of the Department of Commerce were called upon and they found that the grade of commercial lead used was 99.9 per cent pure, far too pure for satisfactory roofing. They recommended the use of what is technically called hard lead, which contains approximately 6 per cent of antimony. Lead roofs on European cathedrals have lasted for 300 to 500 years, and the metallurgists are of the opinion that lead as manufactured in those days, had impurities sufficient to harden it for roofing use.

Patents

Heating Department.

1,401,847. Pipe Coupling. John Williams, Clinton, Iowa. In a coupling of the class specified, the combination of a pair of tubular heads having coupling units in reverse positions on the outer sides thereof, a pair of gaskets carried by said heads with their outer edges in abutting relation, and rigid coupling members in reverse positions at opposite sides of the heads and provided with longitudinally movable resiliently controlled coupling devices therein clear of the heads and having units to engage the head units and turn on the latter.



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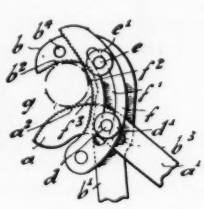
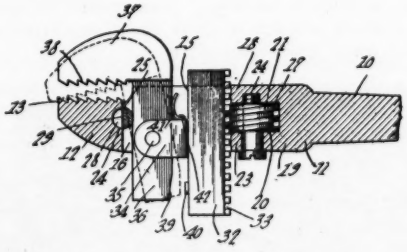


1,401,931.

1,401,931. Adjustable Pipe-Wrench. William Whelan, Plymouth, England. A pipe wrench comprising a pair of levers respectively provided with curved inner and outer gripping jaws, a pivot connecting said levers together, a third gripping element extending across the inner end portions of the jaws and having a curved slot in which the said pivot operates, and a pivot connecting said element to the outer jaw and also operating in the said slot.

1,401,669. Combination Pipe-Wrench. Fredrick F. Calhoun, Tumwater, Wash. A wrench of the class described comprising a handle having a shank portion and a jaw in alinement with the handle, said shank having a slot therethrough at right angles to the face of said jaw, a movable jaw having a shank at right angles with respect thereto and extending through said slot, a block pivotally supporting said shank of the movable jaw whereby the latter may move in angular relation to the first-mentioned jaw,



1,401,669.

said block being engaged in the slot, spring means carried by said block and urging the movable jaw in angular relation to the stationary jaw, means carried by the stationary jaw for holding the movable jaw in spaced parallel relation to the stationary jaw, and rotatable means carried by the shank of the stationary jaw and operatively engaged with said block at one edge of the latter for adjusting the latter in the slot.

1,401,893. Means for Preventing the Formation of Scale in Steam-Boilers. Francis I. du Pont, Wilmington, Del.,

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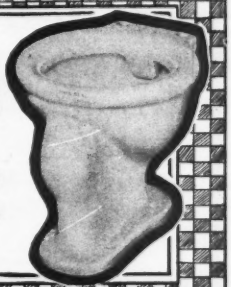

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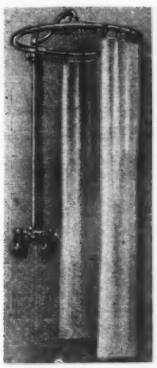

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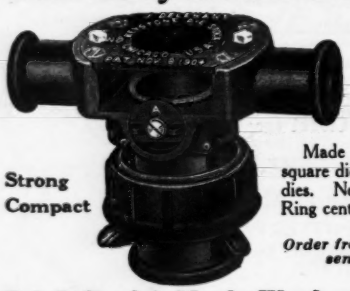

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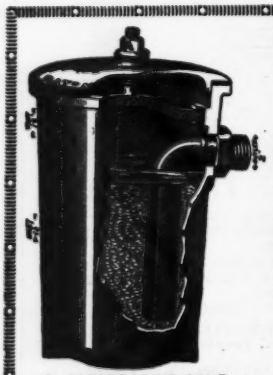

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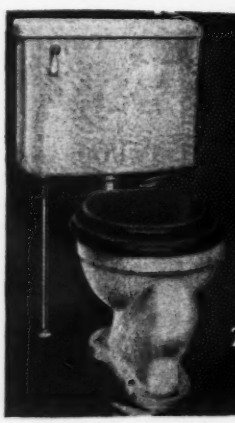

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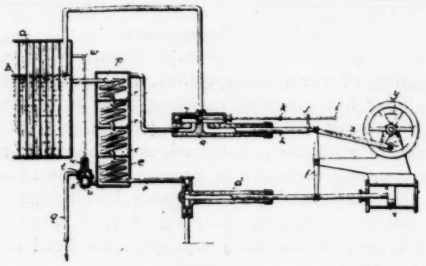
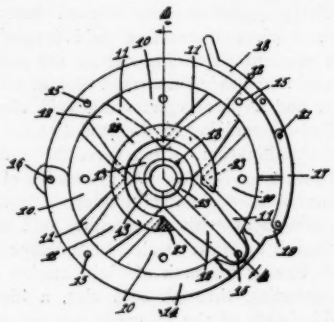


1,401,893.

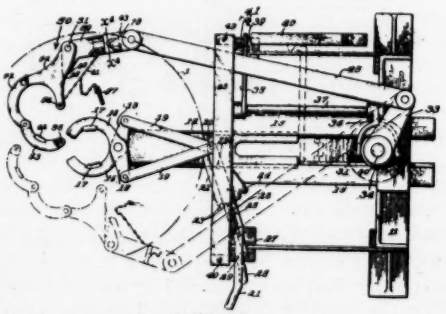
the generator, a double surface heat interchanger connected to said line, the ingoing water passing over one surface while the outgoing water passes over the other surface, to transfer the heat from the outgoing water to the ingoing water, and means for controlling the discharge of water from the heat interchanger.

1,401,312. Chuck. William Castanie, Port Arthur, Tex. In a pipe clamping device, a head, said head being cut away to provide clearances, a clamp arm supporting ring secured to the head, clamp arms carried by the ring and having jaws formed at the free ends thereof, said ring being formed of opposed sections, means for connecting the sections to



1,401,312.

permit the sections to be moved with respect to each other, and said sections adapted to move the clamp arms and jaws toward and away from each other.



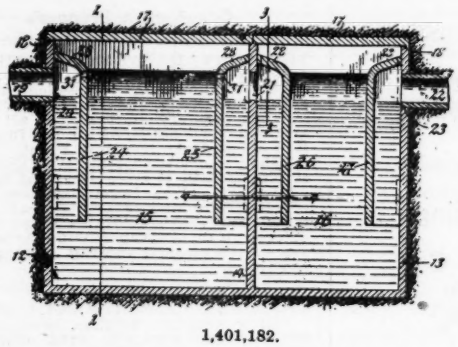
1,401,405.

1,401,405. Pipe-Screwing Machine. Morris C. Hole, Pasadena, Calif. In a device of the nature disclosed the combination including a frame, a rotary drive element, means for holding a pipe section against rotation, an oscillatory pipe tong adapted to engage and operable to intermittently

turn the adjacent pipe section, and motion transmitting mechanism intermediate the drive element and the tong.

Plumbing Department.

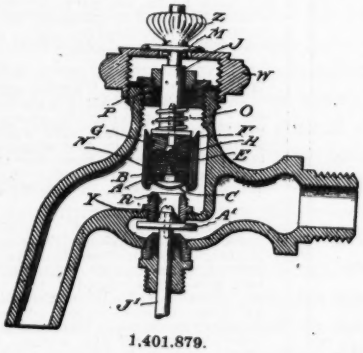
1,401,182. Apparatus for Treating Sewage. Edward F. Overton, Buffalo, N. Y. A sewage treating apparatus comprising a hollow body having a transverse wall provided with an opening in its upper part and seats which are undercut and converge downwardly on opposite sides of said



1,401,182.

opening, and an upright conduit which is of trough-shaped form in cross section and has its upright edges constructed of downwardly converging and dove tail form and engaging with said seats.

1,401,879. Valve, Faucet and the Like. William Righter Comings, Surrey, England. A valve or faucet, comprising a valve stem, a resurfacing tool detachably fixed to the lower end of said stem, a magazine member detachably attached to said tool and adapted to contain both a washer



1,401,879.

for co-operating with the valve seat and spare washers, and a spring split ring engaging grooves in said magazine member and resurfacing tool and forming the detachable connection between the two.

Late News from Massachusetts.

The Martin W. Dugan Co., of Newburyport, has closed contracts for the plumbing for two 40-room hotels, one to be erected by W. J. Clancy, of Newburyport, Mass., and the other by M. R. Harrington, of Manchester, N. H. The hotels are to be located at Hampton Beach, N. H., and occupy sites in the area which was destroyed by fire last spring.

Proposals for heating and plumbing the power house, laundry and garage of the Fall River hospital will be received and the contracts awarded within a fortnight by the trustees of hospitals, John A. Carroll, secretary. Plans and specifications are by E. M. Corbett, architect, of Fall River.

George E. Marchand, commissioner of public property, has called for bids for heating, ventilating and plumbing the bungalow type schoolhouse to be known as the Morey school, Lowell.

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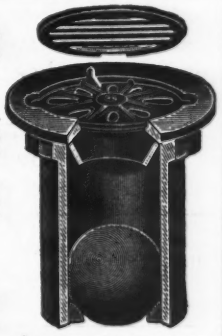

This Floor and Back Water Drain provides absolute protection against flooded basements.

Equipped with the Shilvock Double-Acting Copper Ball Valve that makes assurance doubly sure. Ball is automatic—brass disc operates by hand.

At all jobbers.
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Manufacturers of Bends, Drum Traps, Cleanouts, Oakum, Soil Pipe and Fittings, Drainage Fittings, etc.

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Especially designed for automatic control of Tank Heaters and Garbage Burners.

Easily installed. Self-contained. Safe. Durable.

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8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00. One inch $4.00. Cash must accompany order. Copy should reach us Tuesday morning.

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WANTED—PLUMBING SALESMAN TO carry plumbing specialties as side line. Liberal commission. State territory desired. Address 461, "Domestic Engineering," 1900 Prairie Ave., Chicago. 1-7-21

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WANTED — RADIATOR and boiler salesman for Pittsburgh. Give previous experience in heating business and references in first letter. Address Union Radiator Co., Johnstown, Pa. 1-21tf

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WANTED
A MAN WITH EXPERIENCE

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C. N. Cressman Co.
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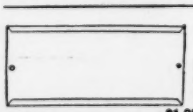
If you are looking for competent employes; or if you contemplate a change in position, have a patent for sale; wish to purchase or sell a plumbing and heating business; second-hand machinery or tools; form a co-partnership, etc., your advertisement on this page will put you in touch with the people you desire to reach.

The cost of insertion is only eight cents a word and may mean many dollars to you.

SELL US YOUR SURPLUS PIPE COUPlings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf



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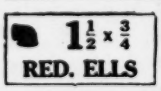

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Send for samples.
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Government Proposals

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., January 12, 1922.—Sealed proposals will be opened in this office at 3 p. m., January 31, 1922, for all labor and materials required for the installation of a Refrigerating Plant in the Kitchen and Mess Building at the U. S. Public Health Service Hospital No. 27, Alexandria, La., in accordance with specification and drawing, copies of which may be had at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., January 10, 1922.—Separate sealed proposals will be opened in this office at 3 p. m., January 26, 1922, for the installation of an ice making and refrigerating plant in the U. S. Treasury Building, Washington, D. C. Drawings and specifications may be obtained at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

Books for Your Trade Library

SANITATION IN THE MODERN Home. By John K. Allen. Explains the proper arrangement and equipment of bath room, laundry, kitchen, etc. A suitable book to present to your customer or prospective one. Size, 5¼x8 in. 272 pages. Cloth. Price, $2.00.

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JOHNSON'S HANDY MANUAL. By John W. Johnson. The author is a practical plumbing and heating man, having spent many years in workshops and has superintended the installation of plumbing and heating systems of all descriptions. Nine editions of this popular book have been exhausted. The tenth is just off the press. Size 4x6¾. Cloth. Price, $1.75.

PRINCIPLES AND PRACTICE OF COST ACCOUNTING. By F. H. Baugh. Presents a modern method of accounting for the plumber and steamfitter. A text and form book for those who preciation, administrative expense, etc. Illustrated by numerous forms. Size would become expert in keeping track of selling costs, overhead expense, de- 6x9 in. 194 pages. Half leather. Price, $3.00.

DEAN'S STEAMFITTER'S COMPUTATION BOOK. Consists of tables giving cubical contents of rooms of various sizes; number of square feet of wall surface and window surface; radiation required for rooms of any size at various proportions; sizes of flow and return pipes approximately proportioned to surface in radiators; circumference of areas and circles; capacities of boilers for hot water heating and for low pressure steam heating systems, and much general information on points of interest to steam and hot water fitters. Size 5x7½ in. 82 pages. Cloth. Price, 2.50.

Domestic Engineering
1900 Prairie Avenue, Chicago

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